
The Encyclopedia of Neutrosophic Researchers

Florentin Smarandache
(founder and editor)

1st Volume
2016



Pons Editions



Neutrosophic Science International Association

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1st Volume

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Florentin Smarandache

(founder and editor)

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Contents

Foreword	11
History of Neutrosophic Theory and its Applications	13
Nassim Abbas	19
A. A. A. Agboola	20
Mumtaz Ali	22
Abdul Quaiyum Ansari	28
Ahmed Metwalli Anter	30
Swati Aggarwal	32
Meena Arora	35
Durga Banerjee	37
Sameh H. Basha	39
Tanushree Mitra Basu	40
Romualdas Bausys	41
Pranab Biswas	43
Said Broumi	46
Emilia Calefariu	50
Gavrilă Calefariu	51
Amarjit Chanda	52
Rajashi Chatterjee	53
Shyamal Dalapati	54
Luu Quoc Dat	56
Mithun Datta	61
Partha Pratim Dey	62
Irfan Deli	65
Ashit Kumar Dutta	68
Azeddine Elhassouny	69
Mohamed Abd Elfattah	70
Shaimaa M. Elnazer	71
Ahmed Kuder Essa Al-Jubouri	72
Selim Eraslan	74
Mohammadreza Faraji	75
Daniela Gîfu	77

Yanhui Guo	79
Savita Gupta	84
Nasruddin Hassan	86
Ibrahim Mohammed Hezam Al-Mishanah	87
Alice Ionescu	88
J. Martina Jency	90
Huda Esmail Khalid Esmail Al-Jumaily	92
Faruk Karaaslan	95
Serkan Karatas	97
Madad Khan	100
Qaisar Khan	102
K. Kandasamy	103
W. B. Vasantha Kandasamy	104
Supriya Kar	115
Dalbinder Kour	116
Deepika Koundal	118
K. Ilanthenral	120
Sachin Lakra	123
Chunfang Liu	124
Feng Liu	126
Peide Liu	129
Francisco Gallego Lupiáñez	132
Pinaki Majumdar	137
Mohamed Abed-ElBaset Metwally	139
Kalyan Mondal	140
Anjan Mukherjee	144
Madhumangal Pal	146
Santanu Kumar Patro	148
Vasile Pătrașcu	150
Mihaela-Gabriela Păun	153
Surapati Pramanik	154
Nouran M. Radwan	164
Akbar Rezaei	165
Tapan Kumar Roy	172
Ahmed A. Salama	174
Syamal Kumar Samanta	182
Sadhan Sarkar	183

Gheorghe Săvoiu	184
Nasir Shah	186
Philomina Simon	187
Florentin Smarandache	188
Le Hoang Son	206
Mirela Teodorescu	208
Luige Vlădăreanu Sr.	211
Ștefan Vlăduțescu	218
Edmundas Kazimieras Zavadskas	220
Hai-Long Yang	223
Jun Ye	226

Foreword

This is the first volume of the *Encyclopedia of Neutrosophic Researchers*, edited from materials offered by the authors who responded to the editor's invitation.

The authors are listed alphabetically.

The introduction contains a *short history of neutrosophics*, together with [links](#) to the main papers and books.

Neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics, neutrosophic measure, neutrosophic precalculus, neutrosophic calculus and so on are gaining significant attention in solving many real life problems that involve uncertainty, impreciseness, vagueness, incompleteness, inconsistent, and indeterminacy.

In the past years the fields of neutrosophics have been extended and applied in various fields, such as: artificial intelligence, data mining, soft computing, decision making in incomplete / indeterminate / inconsistent information systems, image processing, computational modelling, robotics, medical diagnosis, biomedical engineering, investment problems, economic forecasting, social science, humanistic and practical achievements.

The authors, who have published neutrosophic papers, books, or defended neutrosophic master theses or PhD dissertations and are not included in this volume, are kindly invited to send their CV, a photo, and a list of neutrosophic publications to fsmarandache@gmail.com and neutrosophy@laposte.net to be part of the second volume.

Prof. Florentin Smarandache, Ph D

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<http://fs.gallup.unm.edu/neutrosophy.htm>

President of The Neutrosophic Science International Association

History of Neutrosophic Theory and its Applications

Zadeh introduced the *degree of membership/truth* (t) in 1965 and defined the fuzzy set.

Atanassov introduced the *degree of nonmembership/falsehood* (f) in 1986 and defined the intuitionistic fuzzy set.

Smarandache introduced the *degree of indeterminacy/neutrality* (i) as independent component in 1995 (published in 1998) and defined the neutrosophic set on three components (t, i, f) = (truth, indeterminacy, falsehood):

<http://fs.gallup.unm.edu/FlorentinSmarandache.htm>.

Etymology. The words “neutrosophy” and “neutrosophic” were coined/invented by F. Smarandache in his 1998 book.

Neutrosophy: A branch of philosophy, introduced by F. Smarandache in 1980, which studies the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra.

Neutrosophy considers a proposition, theory, event, concept, or entity, "A" in relation to its opposite, "Anti-A" and that which is not A, "Non-A", and that which is neither "A" nor "Anti-A", denoted by "Neut-A".

Neutrosophy is the basis of [neutrosophic logic](#), [neutrosophic probability](#), [neutrosophic set](#), and [neutrosophic statistics](#).

{From: *The Free Online Dictionary of Computing*, edited by Denis Howe from England. Neutrosophy is an extension of the Dialectics.}

Neutrosophic Logic is a general framework for unification of many existing logics, such as fuzzy logic (especially intuitionistic fuzzy logic), paraconsistent logic, intuitionistic logic, etc. The main idea of NL is to characterize each logical statement in a 3D-Neutrosophic Space, where each dimension of the space represents respectively the truth (T), the falsehood (F), and the indeterminacy (I) of the statement under consideration, where T, I, F are standard or non-standard real subsets of $]0, 1[$ with not necessarily any connection between them.

For software engineering proposals the classical unit interval $[0, 1]$ may be used.

T, I, F are *independent components*, leaving room for incomplete information (when their superior sum < 1), paraconsistent and contradictory information (when the superior sum > 1), or complete information (sum of components = 1).

For software engineering proposals the classical unit interval $[0, 1]$ is used.

For single valued neutrosophic logic, the sum of the components is:

- $0 \leq t+i+f \leq 3$ when all three components are independent;
- $0 \leq t+i+f \leq 2$ when two components are dependent, while the third one is independent from them;
- $0 \leq t+i+f \leq 1$ when all three components are dependent.

When three or two of the components T, I, F are independent, one leaves room for incomplete information (sum < 1), paraconsistent and contradictory information (sum > 1), or complete information (sum = 1).

If all three components T, I, F are dependent, then similarly one leaves room for incomplete information (sum < 1), or complete information (sum = 1).

In general, the sum of two components x and y that vary in the unitary interval $[0, 1]$ is:

$0 \leq x + y \leq 2 - d^\circ(x, y)$, where $d^\circ(x, y)$ is the degree of dependence between x and y , while $d^\circ(x, y)$ is the degree of independence between x and y .

In 2013 Smarandache *refined the neutrosophic set to n components*:

$(T_1, T_2, \dots; I_1, I_2, \dots; F_1, F_2, \dots)$;

see <http://fs.gallup.unm.edu/n-ValuedNeutrosophicLogic-PiP.pdf> .

The Most Important Books and Papers in the Development of Neutrosophics

1995-1998 – *Smarandache generalizes the dialectics to neutrosophy; introduces the neutrosophic set/logic/probability/statistics; introduces the single-valued neutrosophic set (pp. 7-8);*

<http://fs.gallup.unm.edu/ebook-neutrosophics6.pdf> (last edition)

2002 – introduces special types of sets / probabilities / statistics / logics, such as:

- intuitionistic set, paraconsistent set, faillibilist set, paradoxist set, pseudo-paradoxist set, tautological set, nihilist set, dialetheist set, trivialist set;
- intuitionistic probability and statistics, paraconsistent probability and statistics, faillibilist

probability and statistics, paradoxist probability and statistics, pseudo-paradoxist probability and statistics, tautological probability and statistics, nihilist probability and statistics, dialetheist probability and statistics, trivialist probability and statistics;

- paradoxist logic (or paradoxism), pseudo-paradoxist logic (or pseudo-paradoxism), tautological logic (or tautologism);

<http://fs.gallup.unm.edu/DefinitionsDerivedFromNeutrosophics.pdf>

2003 – *introduction of neutrosophic numbers ($a+bI$, where $I =$ indeterminacy)*

2003 – *introduction of I-neutrosophic algebraic structures*

2003 – *introduction to neutrosophic cognitive maps*

<http://fs.gallup.unm.edu/NCMs.pdf>

2005 - *introduction of interval neutrosophic set/logic*

<http://fs.gallup.unm.edu/INSL.pdf>

2006 – *introduction of degree of dependence and degree of independence between the neutrosophic components T, I, F*

<http://fs.gallup.unm.edu/ebook-neutrosophics6.pdf> (p. 92)

<http://fs.gallup.unm.edu/NSS/DegreeOfDependenceAndIndependence.pdf>

2007 – The Neutrosophic Set was extended [Smarandache, 2007] to Neutrosophic Overset (when some neutrosophic component is > 1), since he observed that, for example, an employee working overtime deserves a degree of membership > 1 , with respect to an employee that only works regular full-time and whose degree of membership = 1;

and to Neutrosophic Underset (when some neutrosophic component is < 0), since, for example, an employee making more damage than benefit to his company deserves a degree of membership < 0 , with respect to an employee that produces benefit to the company and has the degree of membership > 0 ;

and to and to Neutrosophic Offset (when some neutrosophic components are off the interval $[0, 1]$, i.e. some neutrosophic component > 1 and some neutrosophic component < 0).

Then, similarly, the Neutrosophic Logic / Measure / Probability / Statistics etc. were extended to respectively Neutrosophic Over-/Under-/Off- Logic, Measure, Probability, Statistics etc.

<http://fs.gallup.unm.edu/SVNeutrosophicOverset-JMI.pdf>

<http://fs.gallup.unm.edu/IV-Neutrosophic-Overset-Underset-Offset.pdf>

<https://arxiv.org/ftp/arxiv/papers/1607/1607.00234.pdf>

2007 – Smarandache introduced the Neutrosophic Tripolar Set and Neutrosophic Multipolar Set ,

– the Neutrosophic Tripolar Graph and Neutrosophic Multipolar

Graph

<http://fs.gallup.unm.edu/ebook-neutrosophics6.pdf> (p. 93)

<http://fs.gallup.unm.edu/IFS-generalized.pdf>

2009 – introduction of N -norm and N -conorm

<http://fs.gallup.unm.edu/N-normN-conorm.pdf>

2013 - development of neutrosophic probability

(chance that an event occurs, indeterminate chance of occurrence,

chance that the event does not occur)

<http://fs.gallup.unm.edu/NeutrosophicMeasureIntegralProbability.pdf>

2013 - refinement of components ($T_1, T_2, \dots; I_1, I_2, \dots; F_1, F_2, \dots$)

<http://fs.gallup.unm.edu/n-ValuedNeutrosophicLogic.pdf>

2014 – introduction of the law of included multiple middle

($\langle A \rangle; \langle \text{neut}1A \rangle, \langle \text{neut}2A \rangle, \dots; \langle \text{anti}A \rangle$)

<http://fs.gallup.unm.edu/LawIncludedMultiple-Middle.pdf>

2014 - development of neutrosophic statistics (indeterminacy is introduced into classical statistics with respect to the sample/population, or with respect to the individuals that only partially belong to a sample/population)

<http://fs.gallup.unm.edu/NeutrosophicStatistics.pdf>

2015 - introduction of neutrosophic precalculus and neutrosophic calculus
<http://fs.gallup.unm.edu/NeutrosophicPrecalculusCalculus.pdf>

2015 – refined neutrosophic numbers $(a + b_1I_1 + b_2I_2 + \dots + b_nI_n)$, where I_1, I_2, \dots, I_n are subindeterminacies of indeterminacy I ;

2015 – (t, i, f) -neutrosophic graphs;

2015 - Thesis-Antithesis-Neurothesis, and Neurosynthesis, Neutrosophic Axiomatic System, neutrosophic dynamic systems, symbolic neutrosophic logic, (t, i, f) -Neutrosophic Structures, I-Neutrosophic Structures, Refined Literal Indeterminacy, Multiplication Law of Subindeterminacies:

<http://fs.gallup.unm.edu/SymbolicNeutrosophicTheory.pdf>

2015 – Introduction of the subindeterminacies of the form $I_0^n = \frac{k}{0}$, for $k \in$

$\{0, 1, 2, \dots, n-1\}$, into the ring of modulo integers Z_n - called natural neutrosophic indeterminacies [Vasantha-Smarandache]

<http://fs.gallup.unm.edu/MODNeutrosophicNumbers.pdf>

2015 – Introduction of neutrosophic triplet structures and m -valued refined neutrosophic triplet structures [Smarandache - Ali]

Submit papers on neutrosophic set/logic/probability/statistics to the international journal “Neutrosophic Sets and Systems”, to the editor-in-chief: smarand@unm.edu (see <http://fs.gallup.unm.edu/NSS>).

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Profile

Born in Algeria in 1981. Studies in Fundamental Sciences at the National Polytechnic School, Algiers, Algeria, between 2000 – 2002. Engineering degree in Electronics from the Faculty of Electronics and Computer Science, University of Sciences and Technology Houari Boumediene (USTHB), Algiers, in 2006. MSc and PhD in Signal and Image Processing from USTHB, in 2009 and 2015, respectively. Research Associate in the Systems Architecture and Multimedia Division, Center of Development of Advanced Technologies (CDTA), Algiers, between 2011 – 2012. Joined the Department of Telecommunication of the Faculty of Electronics and Computer Science at USTHB in 2012. Teacher-researcher since 2013 at the same institution.

Research Interests

feature generation; machine learning; evidence theory; plausible and paradoxical reasoning theory; neutrosophic theory and its applications for target identification, document analysis, multimodal biometric verification, satellite images classification and fusion.

List of Publications in Neutrosophics

Florentin Smarandache, Nassim Abbas, Youcef Chibani, Bilal Hadjadji, Zayen Azzouz Omar (2016). PCR5 and Neutrosophic Probability in Target Identification. Journal of Progress in Nonlinear Dynamics and Chaos (PINDAC), vol. 4, no. 2, pp. 45-50, Jul. 2016.

Dr.

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Mathematics Lecturer

Affiliation

Department of Mathematics
Federal University of Agriculture
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Profile

Graduated from the University of Lagos, Nigeria, with BSc, MSc and PhD in Mathematics. Mathematics Lecturer in the Department of Mathematics, Federal University of Agriculture, Abeokuta, Nigeria for over two decades. Complete name: Agboola Adesina Abdul Akeem.

Research Interests

linear and multilinear algebra; functional analysis; fuzzy sets; fuzzy algebraic structures; algebraic hyperstructures; neutrosophy; neutrosophic sets; neutrosophic algebraic structures; neutrosophic algebraic hyperstructures.

Neutrosophic Research

His neutrosophic researches are focused on neutrosophic vector and hypervector spaces, neutrosophic groups, neutrosophic hypergroups, neutrosophic rings, neutrosophic nearrings, neutrosophic BCI/BCK algebras and refined neutrosophic algebraic structures. Currently working on neutrosophic quadruple algebraic structures.

List of Publications in Neutrosophics

Agboola A.A.A., Akinola A.D., Oyebola O.Y. (2011).
Neutrosophic Rings I. International Journal of
Mathematical Combinatorics, 4, 1-14. Published by The
Madis of Chinese Academy of Sciences, China.

- Agboola A.A.A., Adeleke E.O., Akinleye S.A. (2012). Neutrosophic Rings II. *International Journal of Mathematical Combinatorics*, 2, 1-8. Published by The Madis of Chinese Academy of Sciences, China.
- Agboola A.A.A., Akwu A.D., Oyebo Y.T. (2012). Neutrosophic Groups and Subgroups. *International Journal of Mathematical Combinatorics*, 3, 1-9. Published by The Madis of Chinese Academy of Sciences, China.
- Agboola A.A.A., Davvaz B. (2013). Introduction to Neutrosophic Hypergroups. *ROMAI Journal of Mathematics*, 9 (2), 1-10.
- Agboola A.A.A., Davvaz B. (2014). On Neutrosophic Canonical Hypergroups and Neutrosophic Hyperring. *Neutrosophic Sets and Systems*, 2, 34-41.
- Agboola A.A.A., Akinleye S.A. (2014). Neutrosophic Hypercompositional Structures defined by Binary Relations. *Neutrosophic Sets and Systems*, 3, 31-38.
- Agboola A.A.A., Akinleye S.A. (2014). Neutrosophic Vector Spaces. *Neutrosophic Sets and Systems*, 4, 9-18.
- Agboola A.A.A. (2015). On Refined Neutrosophic Algebraic Structures. *Neutrosophic Sets and Systems*, 10, 99-101.
- Agboola A.A.A., Davvaz B. (2015). Introduction to Neutrosophic BCI/BCK-algebras, *Int. J. Math. Math. Sci.*, Article ID 370267.
- Agboola A.A.A., Davvaz B. (2015). On Neutrosophic Ideals of Neutrosophic BCI-algebras. *Critical Review* 10, 93-103.
- Agboola A.A.A., Akinleye S.A. (2015). On Neutrosophic Hypervector Spaces. To appear in *ROMAI Journal of Mathematics*.
- Akinleye S.A., Adeleke E.O., Agboola A.A.A., (2016), Introduction to Neutrosophic Nearings. To appear in *Annals of Fuzzy Mathematics and Informatics (AFMI)*

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Profile

Born Feb. 7th, 1988, in Pakistan. BSc in Mathematics & Computer Science from Pakistan Degree College Nowshera (2007-2009). MSc in Mathematics from Quaid-i-Azam University, Islamabad (2010-2012). MPhil in Mathematics from the same university (2012-2014). Currently serving as Associate Editor-in-Chief of *Neutrosophic Sets and Systems*, an International Journal in Information Science and Engineering. Honorary Doctorate Degree for his research contributions. One of the pioneers of Neutrosophic Set and Logic; proposed the Neutrosophic Triplets. Author of three books on neutrosophic algebraic structures. Published more than 30 research papers in prestigious journals. Also reviewed several international books in different areas of algebraic structures, fuzzy sets and logics, neutrosophic sets and logics. Referring Journals: *Neural Computing and Applications* (NCA), *Iranian Journal of Fuzzy Sets and Systems*, *Applied Mathematics & Information Sciences* (AMIS), *Journal of Physical Science and Environmental Studies*, *Journal of Experimental & Theoretical Artificial Intelligence*, *Journal of New Theory*, *Annals of Fuzzy Mathematics and Informatics*. Member of Pakistan Mathematical Society (PakMS), Islamabad. Member of Quaidian Mathematical Society (QMS), Islamabad.

Research Interests

neutrosophic set and logic; complex neutrosophic set and logic; hybrid structures of neutrosophic set; fuzzy set and logic; soft computing; decision support systems; machine learning; data mining; algebraic structures based on neutrosophic set; neutrosophic triplet algebraic structures; algebraic coding theory; soft set theory; clustering problems.

List of Publications in Neutrosophics

- M. Ali, F. Smarandache. Complex Neutrosophic Set, Neural Computing and Applications, Vol. 25, (2016), 1-18. DOI: 10.1007/s00521-015-2154-y.
- I. Deli, M. Ali, F. Smarandache. Bipolar Neutrosophic Sets And Their Application Based On Multi-Criteria Decision Making Problems. (Proceeding of the 2015 International Conference on Advanced Mechatronic Systems, Beijing, China, August 22-24, 2015. IEEE Xplore, DOI: 10.1109/ICAMechS.2015.7287068.
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Books

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- F. Smarandache, M. Ali, M. Shabir. *Soft Neutrosophic Algebraic Structures and Their Generalization*. Vol. 1, Education Publishing 1313, Chesapeake Avenue Columbus, Ohio 43212, USA. www.edupublisher.com/
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Chapters in Books

- M. Ali, F. Smarandache. Chapter: Neutrosophic Soft Sets and Their Properties, *Hand Book of Research on Generalized and Hybrid Set Structures and Applications for Soft Computing*. IGI Global Publishing House, USA. ISBN13: 9781466697980 | DOI: 10.4018/978-1-4666-9798-0.ch014, <http://www.igi-global.com/chapter/neutrosophic-soft-sets-and-their-properties/148011>
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Submitted Papers

- M. Ali, Nguyen Van Minh, Le Hoang Son. A Neutrosophic Recommender System for Medical Diagnosis Based on Algebraic Neutrosophic Measures. *IEEE Transaction on Fuzzy Systems* (Submitted).

- M. Ali, F. Smarandache, W. B. V. Kandasamy. New Class of Soft Linear Algebraic Codes and Their Properties Using Soft Sets. *Journal of Applied Soft Computing*, (Submitted on 30th May, 2015).
- M. Ali, I. Deli. Bipolar Neutrosophic Soft Sets and Their Application Based on Decision Making. The 2016 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2016) , December 6-9, 2016.
- M. Ali, D. E. Tamir, N. D. Rishe, A. Kandel. Quaternion Numbers Representation of Pure Complex Intuitionistic Fuzzy Classes. The 2016 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2016), December 6-9, 2016.
- M. Shabir, M. Ali, M. Naz. Soft Group Actions. *Journal of Intelligent and Fuzzy Systems* (Submitted).
- C. D. Ngan, M. Ali, L. H. Son. δ -equalities of Intuitionistic Fuzzy Sets and Their Application to Medical Diagnosis. *Fuzzy Optimization and Decision Making* (Submitted).

Prof. Dr.

Abdul Quaiyum Ansari



Affiliation

Department of Electrical Engineering
Faculty of Engineering and Technology
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Profile

BTech from AMU, Aligarh, MTech and PhD from IIT Delhi and JMI, New Delhi, respectively. Professor in the Department of Electrical Engineering at Jamia Millia Islamia, New Delhi. Also served as Professor and Head, Department of Computer Science and as Dean, Faculty of Management Studies and Information Technology at Hamdard University, New Delhi.

Having completed three R & D Major Research Projects, he has got hands on experience of providing consultancy to one of the leading system integration companies of India, ONNYX Electronics, dealing in installation and maintenance of Traffic Signals in major cities of the country.

Successfully guided 12 PhDs and 15 M. Tech. dissertations, and has produced excellent results with proven records through two patent applications, 52 Peer Reviewed International Journal papers, one book each written and edited, 5 Book Chapters, and 90 Peer Reviewed International Conference papers, and has worked as Guest Editor of many International Journals.

Senior Member of IEEE, Fellow and Chartered Engineer of the Institution of Engineers and IETE.

Recipient of the Rajarambapu Patil National Award for Promising Engineering Teacher for Creative Work Done in Technical Education for the year 2011, awarded by the Indian Society for Technical Education, New Delhi, which is a testimony to the fact that he is a person with excellent experience in Policy Planning in Education, Curriculum Development, Human Resource Management, and Innovative Design of Motivational Techniques.

Neutrosophic Research

His contributions are known in the areas of Networks-on-Chip, VLSI, Microwave antenna, Fuzzy Logic and its variants, like Intuitionistic fuzzy logic and Neutrosophic logic. His mathematical formulations for the “Fuzzification of Intuitionistic Fuzzy Sets” have been widely appreciated. In the Neutrosophic Logic, area Prof. Ansari has worked for Neutrosophic classifiers and Neutrosophic modeling and control.

Research Interests

electronic communications; electronic devices; traffic signals.

List of Publications in Neutrosophics

Ansari, A. Q., Biswas, R., & Aggarwal, S. (2012). Neutrosophic classifier: An extension of fuzzy classifier. *Applied Soft Computing*, 13 (2013) 563-573.

<http://dx.doi.org/10.1016/j.asoc.2012.08.002>

Ansari, A. Q., Biswas, R., & Aggarwal, S. (2011). Proposal for Applicability of Neutrosophic Set Theory in Medical AI. *International Journal of Computer Applications*, 27(5), 5-11.

Aggarwal, S., Biswas, R., & Ansari, A. Q. (2010, November). From fuzzification to neutrosophication: A better interface between logic and human reasoning. In *Emerging Trends in Engineering and Technology (ICETET)*, 2010 3rd International Conference on (pp. 21-26). IEEE.

Aggarwal, S., Biswas, R., & Ansari, A. Q. (2010, September). Neutrosophic modeling and control. In *Computer and Communication Technology (ICCCT)*, 2010 International Conference on (pp. 718-723). IEEE.

Ahmed Metwalli Anter

Lecturer Assistant

Affiliation

Faculty of Computers and Informatics
Benisuef University / EGYPT



Profile

Lecturer Assistant at Benisuef University (Egypt), Jazan University (Saudi Arabia). Supervision of graduation projects for Computer Science students and Quality Performance System for the Educational Process. Over than 20 scientific publications in high quality journals and international conferences, and book chapters. Reviewer for various international journals and conferences. Founding members of the Scientific Research Group in Egypt (SRGE). Successful solutions for various clients using open source, LAMP environment (Linux Apache MySQL Python), NoSQL, Microsoft .Net, Unix, Linux, Windows (MFC, ATL), Web Programming. Experience in the field of medical information systems (PIS, RIS, DICOM, PACS, LIS, HL7,...).

Research Interests

databases administration; object oriented programming; systems analysis; technical writing documentation; security web-based strategies; user interface design; quality assurance.

List of Publications in Neutrosophics

Tarek Gaber, Gehad Ismail, Ahmed M. Anter, Mona Soliman, Mona Ali, Noura Semary, Aboul Ella Hassanien, Vaclav Snasel. Thermogram Breast Cancer Prediction Approach based on Neutrosophic Sets and Fuzzy C-Means Algorithm. IEEE, 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), Milano, Italy, pp. 4254-4257, (2015).

Ahmed M. Anter, Abul Ella Hassenian, Mohamed Abu ElSoud.
Neutrosophic Sets and Fuzzy C-means Clustering for
Improving CT Liver Image Segmentation. 5th Internat.
Conf. on Innovations in Bio-Inspired Computing and
Applications, IBICA2014, Springer, Vol. 303, pp. 193-203,
(2014).

Submitted Papers

Ahmed M. Anter, Abul Ella Hassenian, Mohamed Abu ElSoud.
Computational Intelligence Optimization Approach based
on Particle Swarm Optimizer and Neutrosophic logic for
CT liver tumor segmentation. Springer, Neural Computing
and Applications journal, (2015). IF: 1.763. (Submitted).

Ahmed M. Anter, Aboul Ella Hassenian, Mohamed Abu ElSoud.
CT liver tumor segmentation hybrid approach using
neutrosophic sets, fast fuzzy C-means and watershed
algorithm. Elsevier, Computer methods and programs in
biomedicine, (2015). IF: 1.90. (Submitted).

Dr.

Swati Aggarwal

Assistant Professor

Affiliation

Computer Engineering Department
Netaji Subhas Institute of Technology
University of Delhi
Dwarka, Delhi / INDIA



Profile

PhD from University Jamia Millia Islamia, New Delhi. More than 14 years of teaching experience and 8 years of research experience. Published (or contributed to) many quality papers in referred journals and presented in various international conferences. Currently working as Assistant Professor at Netaji Subhas Institute of Technology, affiliated to the University of Delhi, India.

Research Interests

neutrosophic logic; fuzzy sets; artificial intelligence; neural network; soft computing based techniques; machine learning.

List of Publications in Neutrosophics

Book Chapter

Aggarwal, Swati, Anurag Bishnoi. Neutrosophic Trust Evaluation Model in B2C E-Commerce. Hybrid Soft Computing Approaches. Springer India, 2016. 405-427.

Journals

Ansari, A. Q., Biswas, R., & Aggarwal, S. (2012). Neutrosophic classifier: An extension of fuzzy classifier. Elsevier-Applied Soft Computing, 13 (2013) 563-573. (Impact factor: 2.86) <http://dx.doi.org/10.1016/j.asoc.2012.08.002>.

Ansari, A. Q., Biswas, R., & Aggarwal, S. (2011). Proposal for Applicability of Neutrosophic Set Theory in Medical AI. International Journal of Computer Applications, 27(5), 5-11. (Impact factor: 0.814) (doi: 10.5120/3299-4505).

International Conferences

- Kanika, Swati Aggarwal. Experimenting with Neutrosophic Ontologies for medical data classification. IEEE Workshop on Computational Intelligence (IEEE WCI 2015) (14th -17th Dec,15), hosted by IIT Kanpur.
- Megha, Swati Aggarwal. An ensemble design of Rough sets with Neutrosophic relational maps for handling uncertainty. 12th IEEE India International Conference, 2015 (INDICON 2015), (17th -20th Dec,15), hosted by Jamia Millia Islamia, New Delhi, India.
- Kanika, Swati Aggarwal. Multi-attribute data classification using neutrosophic probability. 12th IEEE India International Conference, 2015 (INDICON 2015), (17th -20th Dec,15), hosted by Jamia Millia Islamia, New Delhi, India.
- Bhutani, K., Kumar, M., Dahiya, S., Garg, G., & Aggarwal, S. (2015). Cognitive maps analysis of a social evil: Corruption. International Conference on Cognitive Computing and Information Processing (CCIP-2015). IEEE.
- Garg, G., Kumar, M., Bhutani, K., & Aggarwal, S. (2015). Hybrid model for medical diagnosis using Neutrosophic cognitive maps with genetic algorithms (2015). FUZZ-IEEE 2015 (IEEE International conference on fuzzy systems).
- Garg, G., Kumar, M., Bhutani, K., & Aggarwal, S. (2015). Understanding India's skewed sex ratio problem using cognitive maps (2015). FUZZ-IEEE 2015 (IEEE International conference on fuzzy systems).
- Aggarwal, S., Biswas, R., & Ansari, A. Q. (2010, November). From fuzzification to neutrosophication: A better interface between logic and human reasoning. In *Emerging Trends in Engineering and Technology (ICETET)*, 2010 3rd International Conference on (pp. 21-26). IEEE. (doi: 10.1109/ICETET.2010.26).
- Aggarwal, S., Biswas, R., & Ansari, A. Q. (2010, September). Neutrosophic modeling and control. In *Computer and Communication Technology (ICCCT)*, 2010 Intl Conf. on (pp. 718-723). IEEE. (doi:10.1109/ICCCT.2010.5640435).

Ansari, A. Q., Biswas, R., & Aggarwal, S. Extension to Fuzzy Logic Representation: Moving Towards Neutrosophic Logic - A New Laboratory Rat Paper. Accepted for presentation in 34th IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2013) - (hosted by ISI Calcutta), 8th - 10th July'13. (doi:10.1109/FUZZ-IEEE.2013.6622412).

Ansari, A. Q., Biswas, R., & Aggarwal, S. (Poster Presentation) Neutrosophication of Fuzzy Models. IEEE Workshop On Computational Intelligence: Theories, Applications and Future Directions (hosted by IIT Kanpur), 14th July' 13.

National Conferences

Kanika, Swati Aggarwal, Novel Approach for data classification using Neutrosophic entropy. Computer Society of India, 50th Golden Jubilee Celebrations and Annual Convention on Digital Life (2nd - 4th Dec. 2015).

Special talks / lectures given

Lecture by Swati Aggarwal on "Neutrosophic Classifier: An Extension of Fuzzy Classifier" to Text Analysis and Machine learning Group at University of Ottawa, Canada on 8th June 2015.

Webinar by Swati Aggarwal on " A perspective shift from Fuzzy logic to Neutrosophic Logic", (<https://youtu.be/WryVUv5Bq98>).

Third position secured in the 2015 Webinar Competition for Students and Professionals organized by IEEE-CIS (Computational Intelligence Society).

Dr.

Meena Arora

Associate Professor

Affiliation

CSE Department
JSS Academy of Technical Education
Noida / INDIA



Profile

PhD in Computer science & engineering with the topic “Neutrosophic searching techniques”. Associate Professor at JSS Academy of Technical education, Noida, U.P, India. Two decades of teaching experience in academic field. Published books on relational database management systems. Member of IAENG and IACSIT professional bodies.

Research Interests

relational database management systems; artificial intelligence; data structures; information systems.

List of Publications in Neutrosophics

Papers

Meena Arora, Ranjit Biswas. Rank Neutrosophic Armstrong Axioms and Functional Dependencies. International Journal of Comp. Sc. & Comm. IJCSC Vol-I, Number-II, 2010, pp. 447-450, <http://csjournals.com/IJCSC/PDF1-2/90.pdf>

Meena Arora, Ranjit Biswas. Neutrosophic Relational Database Search Approach To Capture inconsistent Information. International Journal of Information Technology & Knowledge Management IJITKM Vol-IV, Number-I, 2010, pp. 57-61.

Meena Arora, Ranjit Biswas, U.S.Pandey. Neutrosophic Relational Database Decomposition. International Journal of Advanced Computer Science and Applications (IJACSA), Vol. 2, No. 8, (2011), pp. 121-125.

Nikhila Zalpuri, Meena Arora. An efficient model for SMS Security and Spam Detection: A Review. *International Journal of Computer Sciences and Engineering*, Vol. 3, Issue 12, Dec. 2015, pp. 43-49, E-ISSN: 2347-2693.

Conferences

Meena Arora, Ranjit Biswas. Deployment of Neutrosophic Technology to Retrieve Imprecise Data in Bio-Informatics. *International Conference on Computer Applications - Computer Applications*. DOI: 10.3850/978-981-08-7304-2_0085.

Meena Arora, Ranjit Biswas. Deployment of Neutrosophic Technology to retrieve answers for queries posed in Natural Language. 3rd IEEE International conference on Computer science and Information Technology ICCSIT 2010. DOI: 10.1109/ICCSIT.2010.5564125

Durga Banerjee

PhD Student

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Affiliation

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West Bengal – 700032 / INDIA



Profile

Bachelor of Science in Mathematics in 2003 from the University of Kalyani and Master of Science in Mathematics in 2005 from the Jadavpur University, West Bengal, India. NET conducted by CSIR-UGC in December, 2009. Pursuing Doctoral degree from the Department of Mathematics, Jadavpur University, Kolkata, India, under the supervision of Prof. Dr. Bibhas C. Giri and Dr. Surapati Pramanik, with the research topic “Decision Making in an Uncertain Environment”.

Neutrosophic Research

Contributed two research papers on neutrosophic related studies. She is an innovative researcher in decision making and optimization in uncertain environment namely, fuzzy, stochastic and neutrosophic environment. She has been serving as a reviewer.

Pramanik, Banerjee and Giri (Pramanik et al. 2016a) studied ‘Multi – criteria group decision making model in neutrosophic refined set and its application’. Pramanik, Banerjee and Giri (Pramanik et al. 2016b) developed a paper studying TOPSIS approach for multi attribute group decision making in refined neutrosophic environment.

Research Interests

neutrosophic multi criteria making; refined set; neutrosophic numbers; neutrosophic cubic sets.

List of Publications in Neutrosophics

- S. Pramanik, D. Banerjee, B. C. Giri. (2016). Multi – criteria group decision making model in neutrosophic refined set and its application. *Global Journal of Engineering Science and Research Management* 3(6), 12-18.
DOI:10.5281/zenodo.55307.ISSN 2349-4506. Impact Factor: 2.545.
- S. Pramanik, D. Banerjee, B. C. Giri. (2016). TOPSIS approach for multi attribute group decision making in refined neutrosophic environment. *New Trends in Neutrosophic Theories and Applications*. In Press.

Sameh H. Basha

PhD Student, Lecturer Assistant

Affiliation

Computer Science Division
Mathematics Department
Faculty of Science, Cairo University
Giza / EGYPT



Profile

BSc in mathematics and computer science from the Faculty of Science, Cairo University, in 2005. Master degree in Computer Sciences from Cairo University, with the thesis “Complexity Analysis of Input Rules for Genetic - Fuzzy Data Mining”, in 2011. Currently, PhD Student under the supervision of Prof. Aboul Ella Hassanien (Cairo University, Faculty of Computers and Information, Information Technology Department), Prof. Laila Fahmie and Dr. Areeg Saied (Cairo University, Faculty of Science, Mathematics Department), having as subject the neutrosophic set and its applications. Member of Scientific Research Group in Egypt (SRGE).

Research Interests

soft computing (fuzzy logic and genetic algorithm); rough set, neutrosophic set and neutrosophic logic; data mining.

List of Publications in Neutrosophics

Zawbaa, H. M., M. Abbass, S. Basha, M. Hazman, and A. E. Hassanien. An Automatic Flower Classification Approach Using Machine Learning Algorithms. *Advances in Computing, Communications and Informatics (ICACCI, 2014 International Conference on, New Delhi, 24-27 Sept. 2014.*

Sameh H. Basha, Areeg S. Abdalla, Aboul Ella Hassanien. NRCS: Neutrosophic Rule-based Classification System. Accepted in the SAI Intelligent Systems Conference 2016 (IntelliSys 2016), 21-22 Sep 2016, London, UK.

Dr.

Tanushree Mitra Basu

Research Scholar



Affiliation

Department of Applied Mathematics
Vidyasagar University
Midnapore, West Bengal, 721102 / INDIA

Profile

Research scholar in the Department of Applied Mathematics in Vidyasagar University, India. Graduation, post graduation and BEd from Visva-Bharati University, in 2003, 2005 and 2006 respectively. Completed her PhD from Vidyasagar University, in 2013.

Neutrosophic Research

Currently looking forward to develop Neutrosophic Theory in the parlance of Soft Set Theory. Interested in various aspects of algebra and analysis in the ground of neutrosophic soft set theory and its implementation in solving real life decision making problems.

Research Interests

soft set theory; neutrosophics.

List of Publications in Neutrosophics

Tanushree Mitra Basu, Shyamal Kumar Mondal (2015).
Neutrosophic Soft Matrix and It's Application in Solving
Group Decision Making Problems from Medical Science,
Computer Communication & Collaboration, Vol. 3, Issue 1,
pp. 1-31. © 2015 Academic Research Centre of Canada.

Prof. Dr. Sc.

Romualdas Bausys



Affiliation

Vilnius Gediminas Technical University
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Profile

Born in Vilnius, Lithuania, in 1958. Received the doctoral degree in technical sciences (PhD) in 1989 and the degree of Doctor of Sciences from Vilnius Gediminas Technical University in 2000. Professor (since 2001) at Vilnius Gediminas Technical University. Head of the Department of Graphical Systems, Fundamental Sciences Faculty (VGTU). Published over 80 research articles and 7 textbooks.

Research Interests

multimedia processing; numerical methods; operational research methods; decision support systems; multi-criteria decision making.

List of Publications in Neutrosophics

- Baušys, R., Zavadskas, E. K. (2015). Multicriteria decision making approach by VIKOR under interval neutrosophic set environment. *Economic computation and economic cybernetics studies and research (ECECSR)* 49(4): 33-48.
- Baušys, R., Zavadskas, E. K., Kaklauskas, A. (2015). Application of neutrosophic set to multicriteria decision making by COPRAS. *Economic computation and economic cybernetics studies and research (ECECSR)* 49(2): 91-106.
- Zavadskas, E. K., Baušys, R., Lazauskas, M. (2015). Sustainable assessment of alternative sites for the construction of a waste incineration plant by applying WASPAS method with single-valued neutrosophic set. *Sustainability* 7(12): 15923-15936.

Zavadskas, E. K., Baušys, R., Stanujkic, D., Magdalinovic-Kalinovic, M. (2016). Selection of lead-zinc flotation circuit design by applying WASPAS method with single-valued neutrosophic set. *Acta Montanistica Slovaca* 21(2): 125-132.

Pranab Biswas

PhD Student, Assistant Teacher of Mathematics

Affiliation

Department of Mathematics
Jadavpur University
Raja S.C. Mallick Rd, Kolkata
West Bengal – 700032 / INDIA



Profile

Bachelor of Science in Mathematics in 2003 and MSc in Mathematics in 2005, both from the University of Kalyani, West Bengal, India. Junior Research Fellow-NET (JRF-NET) conducted by CSIR-UGC in December, 2008. Doctoral candidate at Department of Mathematics, Jadavpur University, Kolkata, India, since 2014, under supervision of Prof. Dr. Bibhas C. Giri and Dr. Surapati Pramanik, with the research topic “Decision Making in Neutrosophic Environment”.

Neutrosophic Research

He has contributed five important research papers on neutrosophic related studies to peer reviewed journals, such as “Neural Computing and Applications” or the international neutrosophic journal “Neutrosophic Sets and Systems”. He is an innovative researcher in decision making and optimization in uncertain environment namely, fuzzy, intuitionistic and neutrosophic environment. Biswas, Pramanik and Giri (Biswas et al. 2014a) studied neutrosophic grey relational coefficient and established entropy based modified grey relational analysis (GRA) method to solve for multi attribute decision making (MADM) problem. The same authors (Biswas et al. 2014b) introduced single-valued neutrosophic multiple attribute decision-making problem with incompletely known or completely unknown attribute weight information based on modified GRA. Also, the authors (Biswas et al. 2015a) studied cosine similarity measure based multiple attribute decision-making with trapezoidal fuzzy neutrosophic numbers, and proved expected value theorem for trapezoidal fuzzy neutrosophic numbers. Further on, they (Biswas et al., 2015b) developed a paper studying new TOPSIS-based approach for

multi-attribute group decision making under simplified neutrosophic environment. Finally, they (Pramanik et al., 2015) have developed another paper studying hybrid vector similarity measures and weighted hybrid vector similarity measures for both single valued and interval valued neutrosophic sets and proved some of their basic properties.

Research Interests

neutrosophic multi criteria making; aggregation operators; soft-computing; pattern recognitions; neutrosophic hybrid systems.

List of Publications in Neutrosophics

- P. Biswas, S. Pramanik, & B.C. Giri. (2015a). Cosine similarity measure based multi-attribute decision-making with trapezoidal fuzzy neutrosophic numbers. *Neutrosophic Sets and Systems* 8 (2015), 47-57. (ISSN 2331-6055 (print), ISSN 2331-608X. <http://fs.gallup.unm.edu/NSS/NSS-8-2015.pdf>
- P. Biswas, S. Pramanik, & B. C. Giri (2015b). TOPSIS method for multi-attribute group decision making under single-valued neutrosophic environment. *Neutral Computing and Applications*, Springer. doi:10.1007/s00521-015-1891-2.
- P. Biswas, S. Pramanik, & B. C. Giri. (2014a). Entropy based grey relational analysis method for multi-attribute decision making under single valued neutrosophic assessments. *Neutrosophic Sets and Systems*, 2, 102-110.
- P. Biswas, S. Pramanik, & B. C. Giri (2014b). A new methodology for neutrosophic multi-attribute decision making with unknown weight information. *Neutrosophic Sets and Systems*, 3, 42-50.
- S. Pramanik, P. Biswas, & B. C. Giri. (2015). Hybrid vector similarity measures and their applications to multi-attribute decision making under neutrosophic environment, *Neutral Computing and Applications*, Springer. doi: 10.1007/s00521-015-2125-3.

Conferences (presentation)

- P. Biswas, S. Pramanik, & B. C. Giri, TOPSIS method for multi-attribute decision making using neutrosophic number. International Conference on Nonlinear Dynamics, Analysis, and Optimization of Frontiers of Mathematical Sciences with Applications (ICNDAO 2015), December 9-11, Department of Mathematics, Jadavpur University, Kolkata.
- P. Biswas, P. Dey, S. Pramanik, Grey relational analysis method for single valued neutrosophic multi attribute decision making, National Conference on Non-linear Dynamics, Analysis and Optimization (NADO 2014), December 9-10, Department of Mathematics, Jadavpur University, Kolkata.

Dr.

Said Broumi



Affiliation

Laboratory of Information Processing
University Hassan II, B.P 7955, Sidi Othman
Casablanca / MOROCCO

Profile

Born in Casablanca, Morocco in 1978. MSc in Industrial Automatic from Hassan II University Ainchok, Casablanca. PhD from the University Hassan II, Casablanca.

Research Interests

neutrosophic graph theory; fuzzy theory; intuitionistic fuzzy theory; soft set theory; neutrosophic soft set theory; neutrosophic decision making problem.

List of Publications in Neutrosophics

- S. Broumi, F. Smarandache. Intuitionistic neutrosophic soft set. *Journal of Information and Computing Science*, 8/ 2 (2013) 130-140.
- S. Broumi. Generalized neutrosophic soft set. *International Journal of Computer Science, Engineering and Information Technology*, 3/2 (2013) 17-30.
- S. Broumi, F. Smarandache. More on intuitionistic neutrosophic soft sets. *Computer Science and Information Technology*, 1/4 (2013) 257-268.
- S. Broumi. Generalized neutrosophic soft set. *International Journal of Computer Science, Engineering and Information Technology*, 3(2) (2013) 17-30.
- S. Broumi, F. Smarandache. Correlation Coefficient of Interval Neutrosophic set. *Periodical of Applied Mechanics and*

- Materials, Vol. 436, 2013, with the title Engineering Decisions and Scientific Research Aerospace, Robotics, Biomechanics, Mechanical Engineering and Manufacturing; Proceedings of the International Conference ICMERA, Bucharest, October 2013.
- S. Broumi, F. Smarandache. Several Similarity Measures of Neutrosophic Sets. *Neutrosophic Sets and Systems*, 1, (2013) 54-62.
- S. Broumi, I. Deli, F. Smarandache. Relations on interval valued neutrosophic soft sets. *Journal of New Results in Science*, 5 (2014) 1-20.
- S. Broumi, I. Deli, F. Smarandache. Neutrosophic parameterized soft set theory and its decision making problem. *Italian Journal of Pure and Applied Mathematics*, 32, (2014) 1 -12.
- S. Broumi, F. Smarandache. On Neutrosophic implications. *Neutrosophic Sets and Systems*, Vol. 2, (2014) 9-17.
- S. Broumi, F. Smarandache. Rough neutrosophic sets. *Italian Journal of Pure and Applied Mathematics*, N.32, (2014) 493-502.
- S. Broumi, R. Sahin, F. Smarandache. Generalized interval neutrosophic soft set and its decision making problem. *Journal of New Results in Science* No 7, (2014) 29-47.
- S. Broumi, F. Smarandache, P. K. Maji. Intuitionistic neutrosophic soft set over rings. *Mathematics and Statistics* 2(3): (2014) 120-126, DOI: 10.13189/ms.2014.020303.
- S. Broumi, F. Smarandache. Single valued neutrosophic trapezoid linguistic aggregation operators based multi-attribute decision making. *Bulletin of Pure & Applied Sciences-Mathematics and Statistics*, Volume : 33e, Issue : 2, (2014) 135-155.
- S. Broumi, F. Smarandache. Interval-Valued Neutrosophic Soft Rough Set. *International Journal of Computational Mathematics*. Volume 2015 (2015), Article ID 232919, 13 pages <http://dx.doi.org/10.1155/2015/232919>.
- S. Broumi, F. Smarandache. Lower and upper soft interval valued neutrosophic rough approximations of an IVNSS-relation. *Sisom& Acoustics*, (2014) 8 pages.

- S. Broumi, J. Ye, F. Smarandache. An Extended TOPSIS method for multiple attribute decision making based on interval neutrosophic uncertain linguistic variables. *Neutrosophic Sets and Systems*, Vol 8, (2015) 23-32.
- S. Broumi, F. Smarandache. New operations on interval neutrosophic sets. *Journal of new theory*, N 1, (2015) 24-37, from <http://www.newtheory.org>.
- S. Broumi, F. Smarandache. Neutrosophic refined similarity measure based on cosine function. *Neutrosophic Sets and Systems*, 6, (2014) 41-47.
- S. Broumi, F. Smarandache. Cosine similarity measure of interval valued neutrosophic sets. *Neutrosophic Sets and Systems*, Vol. 5, (2014) 15-20.
- S. Broumi. Single valued neutrosophic soft expert soft set and its application. *Journal of New Theory* 3, (2015) 67-88, <http://www.newtheory.org>.
- S. Broumi, F. Smarandache. Intuitionistic Fuzzy Soft Expert Sets and its Application in Decision Making. *Journal of New Theory*, Number: 1, (2015) 89-105.
- S. Broumi, F. Smarandache. Mapping on Intuitionistic Fuzzy Soft Expert Sets and its Application in Decision Making. *Journal of New Results in science*, Number: 9, (2015) 1-10, From <http://jnrs.gop.edu.tr/>
- S. Broumi, F. Smarandache. Possibility Single valued neutrosophic soft expert soft set and its application. *Journal of New Theory* 4, (2015) 6-29., From <http://www.newtheory.org>.
- S. Broumi, A. Mumtaz, F. Smarandache. Mappings On Neutrosophic Soft Expert Sets. *Journal of New Theory* 5, (2015) 26-42., From <http://www.newtheory.org>.
- S. Broumi. Q-Intuitionistic Fuzzy Soft Sets. *Journal of New Theory* 5, (2015) 80-91, From <http://www.newtheory.org>.
- S. Broumi, I. Deli. Correlation Measure For Neutrosophic Refined Sets And Its Application In Medical Diagnosis. *Palestine Journal of Mathematics*, Vol. 5(1) (2016) , 135–143

- S. Broumi, F. Smarandache. Extended Hausdorff Distance And Similarity Measures For Neutrosophic Refined Sets And Their Application In Medical Diagnosis. *Journal of New Theory* 7, (2015) 64-78., From <http://www.newtheory.org>.
- Irfan Deli, Said Broumi, Florentin Smarandache. On Neutrosophic Refined Sets And Their Applications In Medical Diagnosis. *Journal of New Theory* 6, (2015) 88-98., From <http://www.newtheory.org>.
- S. Broumi, F. Smarandache. New distance and similarity measures of interval neutrosophic sets. *Information Fusion (FUSION)*, 2014 17th Intl Conference, (2014),p 1 – 7.
- Said Broumi, Florentin Smarandache, Mamoni Dhar. On Fuzzy Soft Matrix Based on Reference Function. (2013), *I.J. Information Engineering and Electronic Business*, 2013, 2, 52-59, Published Online August 2013 in MECS (<http://www.mecs-press.org/>).
- Said Broumi, Pinaki Majumdar, Florentin Smarandache. New Operations on Intuitionistic Fuzzy Soft Sets based on Second Zadeh's logical Operators. *I.J. Information Engineering and Electronic Business*, 2014, 1, 25-31, Published Online February 2014 in MECS (<http://www.mecs-press.org/>).
- Said Broumi, Florentin Smarandache. New Operations over Interval Valued Intuitionistic Hesitant Fuzzy Set. *Mathematics and Statistics* 2(2): 62-71, 2014 <http://www.hrpub.org> DOI: 10.13189/ms.2014.020202.
- S. Broumi, M. Talea, A. Bakali, F. Smarandache. Single Valued Neutrosophic Graphs. *Journal of New Theory*, N 10, 2016, pp. 86-101.
- S. Broumi, M. Talea, A. Bakali, F. Smarandache. On Bipolar Single Valued Neutrosophic Graphs. *Journal of New Theory*, N11, 2016, pp.84-102.
- S. Broumi, F. Smarandache, M. Talea, A. Bakali. An Introduction to Bipolar Single Valued Neutrosophic Graph Theory. *Applied Mechanics and Materials*, Vol. 841, pp 184-191, doi:10.4028/www.scientific.net/AMM.841.184.

Dr.

Emilia Calefariu



Affiliation

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Profile

Born in 1987. Bachelor of Economic Science (Accounting and Management Informatics) from the Faculty of Economic Sciences and Business Administration of "Transilvania" University of Braşov (2006 – 2009). BA in Music (Instrumental Performing – Canto) from the Faculty of Music; "Transilvania" University of Braşov (2006 – 2011). MA in Music from the same university. Master degree (Accounting Policies, Audit and Management Control) from the Faculty of Economic Sciences and Business Administration of "Transilvania" University of Braşov. Other development courses graduated: Project Manager; Certificate in English; Web designer; Innovation manager / Team spirit; Human resources inspector; Graduation Certificate: D.P.P.D (Department of Training Teachers) Level I and II; Certificate of Professional Competence for computer operating skills and medium level in programming. Assistant Substitute since 2011 at "Transilvania" University of Braşov. Expert Accountant at The Body of Licensed Accountants and Experts Accountants in Romania since 2015.

List of Publications in Neutrosophics

Emilia Calefariu, Mircea Boşcoianu, Florentin Smarandache, Traian Alexandru Buda. Neutrosophic Modeling of Investment Architectures. Applied Mechanics and Materials Vol. 657 (2014) pp 1011-1015. © (2014) Trans Tech Publications, Switzerland.

Prof. Dr.

Gavrilă Calefariu

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Profile

PhD from the University Transilvania of Braşov, 1997. Worked as Maintenance engineer at Electroprecizia Săcele (1981 – 1983), then Researcher, Assitant Professor, Lecturer, Professor (from 2002) at the University Transilvania of Braşov. PhD supervisor at the same University since 2010, in Engineering and Management doctoral field. Founder of laboratory of Robotics and CNC machine tools (1987), director of the research center of Machines and Production Systems (2005), director of the research center of Advanced Production Technology and Systems (2010). Member of the International Association of Paradoxism, of the International Association of Neutrosophic Science, of the Romanian Association of Unconventional Technologies (ARTN), of the Academic Society of managers in Romania (SAMRO), of the Association managers and engineers economists in Romania (AMIER); founding member of Leaders of Activities Association and PhD Excellence in Engineering Business Management (ACADEMICA); member of the Scientific committee of International Conference on Economic Engineering and Manufacturing Systems (ICEEMS); member of the Scientific committee of International Conference on Manufacturing Systems (ICMaS). Published over 100 articles and 12 books.

List of Publications in Neutrosophics

Monika Moga, Gavrilă Calefariu, Florentin Smarandache, Aurelian Flavius Sârbu, Laura Bogdan. Determining the duration of R&D Processes through Monte Carlo Simulation, Applied Mechanics and Materials, vol. 657 (2014) 886-890.

Amarjit Chanda

Research Scholar

Affiliation

Department of Mathematics
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Tripura, 799022 / INDIA



Profile

Working in the field of Fuzzy Clustering since 2013 with special interest in Information Fusion and Neutrosophic Clustering and their application in the field of image processing, human activity pattern problem etc.

Research Interests

fuzzy set; clustering; neutrosophic set; pattern recognition.

List of Publications in Neutrosophics

Sharmistha Bhattacharya (Halder), Amarjit Chanda. A Study On Intuitionistic Fuzzy Clustering. *The Journal of Fuzzy Mathematics*, 23(3), 2015, 537-547.

Sharmistha Bhattacharya (Halder), Amarjit Chanda. Clustering Using Similarity Measure. *Annals of Fuzzy Mathematics and Informatics*, 11(1), 2016, 97-107.

Sharmistha Bhattacharya (Halder), Amarjit Chanda. A Study on Relational based Image Clustering. *Communicated*

Amarjit Chanda. Clustering Using Similarity Measure For Interval Valued Neutrosophic Soft Set. *Communicated*

Sharmistha Bhattacharya (Halder), Amarjit Chanda. A Survey On Fuzzy Clustering. *Communicated*

Rajashi Chatterjee

Research Scholar

Affiliation

Department of Mathematics
Siksha Bhavana, Visva-Bharati
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West Bengal / INDIA



Profile

Born in 1988, Burdwan District, West Bengal, India. Completed Bachelor of Science in 2009, with Mathematics as core subject. Awarded Master of Science in Pure Mathematics in 2011. Currently working as a research scholar in the Department of Mathematics, Visva-Bharati, India.

Research Interests

single valued neutrosophic multisets; distance and similarity measures between two single valued neutrosophic multisets; inclusion measures; entropy measures; quadripartitioned single valued neutrosophic sets; multi-attribute decision making methods.

List of Publications in Neutrosophics

R Chatterjee, P. Majumdar, S. K. Samanta. Single valued neutrosophic multisets. *Annals of Fuzzy Mathematics and Informatics*, 10(3), 2015, 499-514.

R Chatterjee, P. Majumdar, S. K. Samanta. On some similarity measures and entropy on quadripartitioned single valued neutrosophic sets. *Journal of Intelligent and Fuzzy Systems*, 30(4), 2016, 2475-2845.

Shyamal Dalapati

PhD candidate, Assistant teacher



Affiliation

Department of Mathematics
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Shibpur, 711103, West Bengal / INDIA

Profile

Bachelor of Science in Mathematics in 2011 and Master of Science in Mathematics from the Jadavpur University, West Bengal, India, in 2013. Pursuing PhD in Mathematics at the Indian Institute of Engineering Science and Technology, Shibpur, under the guidance of Dr. Shariful Alam and Dr. Surapati Pramanik, with the research called “Some Studies on Neutrosophic Decision Making”.

Neutrosophic Research

He has defined generalized neutrosophic soft weighted average operator to aggregate all individual opinions. He also developed multi-attribute group decision making (MAGDM) problems in generalized neutrosophic soft based on grey relational analysis. He presented papers in mathematics seminars in the field of neutrosophic decision making.

Research Interests

neutrosophic multi attribute group decision making; neutrosophic hybrid systems; neutrosophic soft multi criteria decision making.

List of Publications in Neutrosophics

- S. Pramanik, S. Dalapati, T.K. Roy (2016). GRA Based Multi Criteria Decision Making in Generalized Neutrosophic Soft Set Environment. *New Trends in Neutrosophic Theories and Applications*. Europa Nova, Brussels. In Press.

- S. Pramanik, S. Dalapati (2016). Logistics Center Location Selection Approach Based on Neutrosophic Multi-Criteria Decision Making. Journal of Engineering Science and Research Management. In Press.

International Seminar (presentation)

- S. Dalapati, S. Pramanik, T.K. Roy (2016). Generalized Neutrosophic Soft Multi-Attribute Group Decision Making Based on Grey Relational Analysis. International Conference on Nonlinear Dynamics, Analysis, and Optimization of Frontiers of Mathematical Sciences with Applications (ICNDAO 2015), December 9-11, Department of Mathematics, Jadavpur University, Kolkata, India. (Abstract Published).

National seminar (presentation)

- Shyamal Dalapati, S. Pramanik, 2016. GRA Based Multi Criteria Decision Making in Generalized Neutrosophic Soft Set Environment. National Seminar on Analysis and Applications (March 10-11,2016) Department of Mathematics, West Bengal State University, Barasat, India. (Abstract Published).

Dr.

Luu Quoc Dat

Lecturer

Affiliation

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VNU University of Economics and Business
144 Xuan Thuy Str, Cau Gay Dist
Hanoi / VIETNAM



Profile

Bachelor in Political Economics, Faculty of Economics of Vietnam Nation University, Hanoi (2003-2007). Master in International Business of Administration, Southern Taiwan University of Technology (2007-2009). PhD program in Industrial Management, National Taiwan University of Science and Technology (2009-2013). Post-doctoral Fellow at Industrial Management department, National Taiwan University of Science and Technology (2013-2014). Research of “Center for Internet of Things Innovation”, National Taiwan University of Science and Technology (2011-2013), Researcher (Post-doctoral Fellow), Industrial Management department, National Taiwan University of Science and Technology (2013-2014), Researcher at Vietnam Institute for Advanced Study in Mathematics (2016).

Research Interests

fuzzy set theory; ranking fuzzy numbers; fuzzy multi-criteria decision making (MCDM); supply chain management; logistic management; renewable energy.

List of Publications in Neutrosophics

Chapters in Books

Dat, L.Q., Chou, S.Y., Le, N.T., Wiguna, E., Yu T.H.K., Phuc, P.N.K. Selecting renewable energy technology via a fuzzy MCDM approach, in: Cha, J.Z., Chou, S.Y., Stjepandić, J., Curran, R., Xu, W. (Eds.) “Advances in Transdisciplinary Engineering”, IOS Press, Netherlands, 2014, Vol. 1, 796-805. ISBN 978-1-61499-439-8 (print) | 978-1-61499-440-4 (online).

- Dat, L.Q., Le, N.T., Son, T.A., Yu, V.F (forthcoming 2016). A new fuzzy TOPSIS method for parting direction selection. *Business Analytics and Operations Research*.
- Chen, H.M.W., Chou, S.Y., Dat L.Q., Yu, T.H.K (2016). A Fuzzy MCDM Approach for Green Supplier Selection from the Economic and Environmental Aspects. *Mathematical Problems in Engineering*, Article ID 8097386, 10 pages, 2016. doi:10.1155/2016/8097386 [SCI].
- Huan, N.C, Thinh, N.A, Dat, L.Q, Ngoc, D.T (2015). Ranking the priority of marine economic activities in small islands based on fuzzy AHP: comparing decision of local residents and authorities in Cu Lao Bo Bai island, central Vietnam. *Journal of Environmental Management and Tourism*, Volume 3, 2(12) (Scopus).
- Dat, L.Q, Phuong, T.T., Kao, H.P., Chou, S.Y (2015). A new integrated fuzzy QFD approach for market segments evaluation and selection. *Applied Mathematical Modelling*, 39 (13) 3653-3665 [SCI/ISI].
- Yu, V.F., Kuo, C.W., Dat, L.Q. (2014). Selection of key component vendor from the aspects of capability, productivity, and reliability. *Mathematical Problems in Engineering*, Article ID 124652, 1-7. [SCI].
- Vincent, F.Y, Dat, L.Q. (2014). An improved ranking method for fuzzy numbers with integral values. *Applied Soft Computing*, 14 Part C, 603-608. [SCI].
- Vincent F.Y., Chi, H.T.X., Dat L.Q., Phuc, P.N.K., Shen, C.W. (2013). Ranking generalized fuzzy numbers in fuzzy decision making based on the left and right transfer coefficients and areas. *Applied Mathematical Modelling*. [SCI].
- Quang, N.H., Vincent, F.Y., Lin, A.C., Dat, L.Q., Chou, S.Y. (2013). Parting curve selection and evaluation using an extension of fuzzy MCDM approach. *Applied Soft Computing*, 13(4), 1952-1959. [SCI].
- Dat, L.Q., Yu, V.F., Chou, S.Y. (2012). An improved ranking method for fuzzy numbers based on the centroid-index.

International Journal of Fuzzy Systems, 14(3), 413-419. [SCI].

Phuc, P.N.K., Yu, V.F., Chou, S.Y., Dat, L.Q. (2012). Analyzing the ranking method for L-R fuzzy numbers based on deviation degree. Computers & Industrial Engineering, 63(4), 1220-1226. [SCI].

Dat, L.Q., Linh, D.T.T., Chou, S.Y., Yu, V.F. (2012). Optimizing reverse logistic costs for recycling end-of-life electrical and electronic products. Expert Systems with Applications, 39(7), 6380-6387. [SCI]. [Top 25 Hottest Articles of Expert Systems with Applications in 2012 - by Science direct].

Yu, V.F., Dat, L.Q., Quang, N.H., Son, T.A., Chou, S.Y., Lin, A.C. (2012). An extension of fuzzy TOPSIS approach based on centroid-index ranking method. Scientific Research and Essays, 7(14), 1485-1493.

Dat, T.M., Nieh, Y.F.N., Lee, M.F.R., Khotimah, W.N., Dat, L.Q. (2012). Intelligent Autonomous Navigation System for the Wheeled Mobile. Advanced Materials Research Vols. 383-390, 1611-1618. [EI].

Dat, L.Q., Yu, V.F., Chou, S.Y. (2012). An improved ranking method for fuzzy numbers using left and right indices. International Proceedings of Computer Science & Information Tech, Vol. 49, p89.

Chou, S.Y., Dat, L.Q., Yu, V.F. (2011). A revised method for ranking fuzzy numbers using maximizing set and minimizing set. Computers & Industrial Engineering, 61(4), 1342-1348. [SCI].

Domestic Journal Articles (in Vietnamese)

Dat, L.Q., Dung, C.C., Dung, H.T., Men, D.T., Ha, V.N. Developing a model to evaluate lecturer performance. Journal of the Asia Pacific Economics, ISSN 0868-3808, 6/2015

International Conferences Papers

Son, T.A., Loc, P.H., Dat, L.Q., Phu, B.H., Nam, N.T. (2014). Determination of Slider Features in Plastic Moldings. AUN/SEED-Net Regional Conference on Mechanical and

- Manufacturing Engineering (RCMME 2014), October 9-10th, HUST, Hanoi, Vietnam.
- Dat, L.Q. (2014). A fuzzy MCDM based on new arithmetic operations between generalized fuzzy numbers. The International Congress of Mathematicians (ICM 2014). Poster presentation, August 13 - 21st, Coex, Seoul, Korea.
- Chou, S.Y., Tuyet, N.A., Dat, L.Q., Yu, T.H.K., Gang, G., Shieh, S.C. (2014). Power Generation and Economic Analysis of Solar Photovoltaic System in Taiwan. The 1st International Conference on Intelligent Green Building and Smart Grid (IGBSG 2014), April 23-25th, 2014, NTUST, Taipei, Taiwan (IEEE data base).
- Dat, L.Q., Dung, C.C., Chou, S.Y., Yu, V.F. (2013). Improved arithmetic operations on generalized fuzzy numbers. 2013 International conference on Fuzzy Theory and Its Applications (iFUZZY 2013), December 6-8, 2013, Taipei, Taiwan (IEEE/Scopus).
- Ngoan, N.T., Dat, L.Q., Wu, C.M. (2013). Determinants of Foreign Direct Investment in Vietnam: A comparison. Conference on Service and Technology Management, National Taipei University of Science and Technology, Taipei, Taiwan, March 26th.
- Chou, S.Y., Dewabharata, A., Yu, V.F., Dat, L.Q. (2012). A fuzzy TOPSIS approach for medical provider selection and evaluation. 2012 International conference on Fuzzy Theory and Its Applications (iFUZZY2012), November 16-18, Taichung, Taiwan (IEEE).
- Son, T.A., Lin, A.C., Dat, L.Q. (2012). Parting direction selection and evaluation using an extension of fuzzy MCDM approach. 2012 International Conference on Information Technology and Management Innovation (ICITMI2012), November 10-11, Guangzhou, China.
- Dat, L.Q., Yu, V.F., Chou, S.Y. (2012). An improved ranking method for fuzzy numbers using left and right indices. International Conference on Computer Design and Engineering, September 1st-2nd, Phuket Island, Thailand.

- Chou, S.Y., Yu, V.F., Dat, L.Q. (2011). An improved fuzzy number ranking method based on the centroid-index. IESS 2011, Sep. 20-22, Surakarta, Indonesia.
- Dat, L.Q., Linh, D.T.T., Chou, S.Y., Yu, V.F. (2010). Optimizing reverse logistics costs for recycling end-of-life electrical and electronic products. MCP-Asia Pacific 2010, December 6-8, NTUST, Taipei, Taiwan.
- Dat, T.M., Nieh, Y.F.N., Lee, M.F.R., Khotimah, W.N., Dat, L.Q. (2010). Intelligent Autonomous Navigation System for the Wheeled Mobile. The 3rd International Forum on Systems and Mechatronics, September 6-9, River View Hotel, Singapore.

Domestic Conferences Papers

- Dat, L.Q. (2013). A new fuzzy QFD model for evaluating and selecting medicine dispensing systems. The conference on "The modern economic theories and management, and policy implications for Vietnam", July, Faculty of Political Economics, VNU - University of Economics and Business.

Working Papers

- Dat, L.Q. et al. Improved arithmetic operations on generalized trapezoidal fuzzy numbers and its application. Submitted. [SCI/ISI].
- Dat, L.Q., Yu, V.F., Chou, S.Y., Chi, H.T.X. An improved method for ranking fuzzy numbers using magnitude concept. Submitted. [SCI/ISI].
- Dat, L.Q., Chou, S.Y., Lin, C.C., Yu, T.H.K. Performance analysis of a photovoltaic system - The case of Taiwan. Submitted. [SCI/ISI].
- Dat, L.Q. et al. A Novel Fuzzy Multi Criteria Decision Making Approach For Supplier Segmentation from the Aspects of Capability and Willingness. Submitted [SCI].

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Research Interests

fuzzy sets, soft sets, neutrosophic sets, neutrosophic soft sets, interval valued neutrosophic soft sets, generalized neutrosophic sets.

List of Publications in Neutrosophics

- A. Mukherjee, M. Datta, A. Saha. Interval Valued Neutrosophic Soft Sets. *The Journal of Fuzzy Mathematics*, Vol. 23, No. 2, 2015, pp. 283-294.
- A. Mukherjee, M. Datta. Interval Valued Neutrosophic Soft Set Relations. *The Journal of Fuzzy Mathematics*, Vol. 23, No. 2, 2015, pp. 309-324.
- A. Mukherjee, M. Datta, F. Smarandache. Interval Valued Neutrosophic Soft Topological Spaces. *Neutrosophic Sets and Systems*, Vol. 6, 2014, pp. 17-26.
- A. Mukherjee, M. Datta, S. Sarkar. Restricted Interval Valued Neutrosophic Sets and Restricted Interval Valued Neutrosophic Topological Spaces. *Neutrosophic Sets and Systems*, Vol. 12, 2016, pp. 45-53.

Dr.

Partha Pratim Dey

Assistant teacher



Affiliation

Department of Mathematics
Jadavpur University
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Kolkata 700032, West Bengal / INDIA

Profile

Bachelor of Science in Mathematics in 2003 and MSc in Mathematics from the University of Kalyani, West Bengal, India, in 2005. PhD in Science from Jadavpur University, Kolkata, India, in 2015. His paper together with Dr. Surapati Pramanik was awarded best paper in West Bengal State Science and Technology Congress in Mathematics (2011).

Neutrosophic Research

He has contributed six significant research papers on neutrosophic related studies to peer reviewed journals such as “Neutrosophic Sets and Systems”, “Journal of New Theory”, “Critical Review”, “Journal of New Results in Science”. He is a dynamic researcher in optimization and decision making in uncertain environment namely, fuzzy, intuitionistic and neutrosophic environment.

Dey, Pramanik and Giri (Dey et al. 2015a) proposed an extended grey relational analysis (GRA) based interval neutrosophic multi-attribute decision making (MADM) for weaver selection in Khadi Institution. The same authors (Pramanik et al. 2015b) have developed technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method for solving single valued neutrosophic soft expert based MADM problems. The same authors (Dey et al. 2015c) formulated a new mathematical model to generalized neutrosophic multi-attribute group decision making (MAGDM) problems based on TOPSIS technique. The same authors (Dey et al. 2016a) have studied GRA method for solving neutrosophic soft

MAGDM problems involving multiple decision makers. The same authors (Dey et al. 2016b) have investigated an extended GRA technique for MADM problems under interval neutrosophic uncertain linguistic setting where the information about attribute weights is partially known or completely unknown to the decision makers. In the same study, the same authors (Dey et al. 2016b) have defined Euclidean distance between two interval neutrosophic uncertain linguistic variables. The same authors (Dey et al. 2016c) have presented a new approach for neutrosophic soft MADM problems through grey relational projection method with unknown weight information of the choice parameters.

Research Interests

neutrosophic multi attribute group decision making; neutrosophic hybrid systems; neutrosophic optimization; neutrosophic soft multi attribute decision making.

List of Publications in Neutrosophics

- Partha Pratim Dey, S. Pramanik, B.C. Giri. (2016a). Neutrosophic soft multi-attribute group decision making based on grey relational analysis method. *Journal of New Results in Science* (10), 25-37. ISSN: 1304-7981.
- Partha Pratim Dey, S. Pramanik, B.C. Giri. (2016b). An extended grey relational analysis based multiple attribute decision making in interval neutrosophic uncertain linguistic setting. *Neutrosophic Sets and Systems* 11, 21-30. ISSN: 2331-608X. Published by University of New Mexico.
- Partha Pratim Dey, S. Pramanik, B.C. Giri. (2016c). Neutrosophic soft multi-attribute decision making based on grey relational projection method. *Neutrosophic Sets and Systems* 11, 98-106. ISSN: 2331-608X. Published by University of New Mexico.
- Partha Pratim Dey, S. Pramanik, B.C. Giri. (2015a). An extended grey relational analysis based interval neutrosophic multi attribute decision making for weaver selection. *Journal of New Theory* (9), 82-93. ISSN: 2149-1402.

Pramanik, Partha Pratim Dey, B.C. Giri. (2015b). TOPSIS for single valued neutrosophic soft expert set based multi-attribute decision making problems. *Neutrosophic Sets and Systems* 10, 88-95. ISSN: 2331-608X. Published by University of New Mexico.

Partha Pratim Dey, S. Pramanik, B.C. Giri. (2015c). Generalized neutrosophic soft multi-attribute group decision making based on TOPSIS. *Critical Review XI*, 41-56. Published by Creighton University.

International Conference (presentation)

Partha Pratim Dey, S. Pramanik, B. C. Giri. 2015. TOPSIS for solving multi-attribute decision making problems under bi-polar neutrosophic environment. Intl Conference on Nonlinear Dynamics, Analysis and Optimization of Frontiers of Mathematical Sciences with Applications (ICNDAO 2015), December 9-11, Department of Mathematics, Jadavpur University, Kolkata, India.

Dr.

Irfan Deli

Affiliation

Muallim Rifat Faculty of Education
Kilis 7 Aralık University
79000 Kilis / TURKEY



Profile

Born 06.04.1986. PhD from Gaziosmanpaşa Üniversitesi.

List of Publications in Neutrosophics

- N. Çağman, İ. Deli. Products of FP-soft sets and their applications. Hacettepe Journal of Mathematics and Statistics, 41 (3) (2012), 365 – 374.
- N. Çağman, İ. Deli. Means of FP-soft sets and their applications. Hacettepe Journal of Mathematics and Statistics 41 (5) (2012), 615 – 625.
- İ. Deli, S. Broumi. Neutrosophic Soft Matrices and NSM-decision Making. Journal of Intelligent and Fuzzy Systems, 28 (5) (2015) 2233–2241.
- I. Deli, N. Çağman. Intuitionistic fuzzy parameterized soft set theory and its decision making. Applied Soft Computing 28 (2015) 109–113.
- I. Deli, N. Çağman. Fuzzy soft games. Filomat 29(9) (2015), 1901–1917.
- M. Ali, I. Deli, Florentin Smarandache. The theory of neutrosophic cubic sets and their applications in pattern recognition. Journal of Intelligent and Fuzzy Systems, 30(4) (2016) 1957–1963.
- I. Deli, S. Karataş. Interval valued intuitionistic fuzzy parameterized soft set theory and its decision making. Journal of Intelligent and Fuzzy Systems, 30(3) (2016) 2073–2082.

- I. Deli, N. Çağman. Probabilistic Equilibrium Solution of Soft Games. *Journal of Intelligent and Fuzzy Systems*, 30(3) (2016) 2237–2244.
- I. Deli. Interval-valued neutrosophic soft sets and its decision making. *International Journal of Machine Learning and Cybernetics*, DOI: 10.1007/s13042-015-0461-3.
- I. Deli, Y. Şubaş. A ranking method of single valued neutrosophic numbers and its applications to multiattribute decision making problems. *International Journal of Machine Learning and Cybernetics*, DOI: 10.1007/s13042-016-0505-3
- S. Broumi, I. Deli, F. Smarandache. Relations on Interval Valued Neutrosophic Soft Sets. *Journal of New Results in Science* 5 (2014) 01-20.
- S. Broumi, I. Deli, F. Smarandache. Distance and Similarity Measures of Interval Neutrosophic Soft Sets. *Critical Review, Center for Mathematics of Uncertainty, Creighton University, USA*, 8 (2014) 14-31.
- İ. Deli, Y. Toktaş, S. Broumi, Neutrosophic Parameterized Soft Relations and Their Applications. *Neutrosophic Sets and Systems*, 4 (2014) 25-34.
- İ. Deli, S. Broumi, Neutrosophic soft relations and some properties. *Annals of Fuzzy Mathematics and Informatics* 9(1) (2015) 169–182.
- S. Broumi, I. Deli, F. Smarandache, Interval valued neutrosophic parameterized soft set theory and its decision making. *Journal of New Results in Science* 7 (2014) 58-71.
- İ. Deli, S. Broumi, M. Ali, Neutrosophic Soft Multi-Set Theory and Its Decision Making. *Neutrosophic Sets and Systems*, 5 (2014) 65-76.
- I. Deli, N. Çağman, Relations on FP-soft sets applied to decision making problems. *Journal of New Theory* 3 (2015) 98-107.
- S. Broumi, İ. Deli. Correlation measure for neutrosophic Refined sets and its application in medical Diagnosis. *Palestine journal of mathematics*, 5(1) (2016) , 135–143.
- S. Broumi, I. Deli, F. Smarandache. N-valued Interval Neutrosophic Sets and Their Application in Medical

Diagnosis. Critical Review, Center for Mathematics of Uncertainty, Creighton University, USA, 10 (2015) 46-69.

- I. Deli, S. Broumi, F. Smarandache. On neutrosophic refined sets and their applications in medical diagnosis. *Journal of New Theory*, 6 (2015) 88-98.
- İ. Deli, N. Çağman. Application of Soft Sets in Decision Making based on Game Theory. *Annals of Fuzzy Mathematics and Informatics*, xx-xx accepted.
- İ. Deli. npn-Soft Sets Theory and Applications. *Annals of Fuzzy Mathematics and Informatics*, 10/6 (2015) 847–862.
- I. Deli, N. Çağman. Similarity measure of IFS-sets and its application in medical diagnosis. *Annals of Fuzzy Mathematics and Informatics*, xx-xx accepted.

Dr.

Ashit Kumar Dutta

Associate Professor

Affiliation

Department of Computer Science
Alquwayiya College of Science and Humanities
Shaqra University
Shaqra / SAUDI ARABIA

List of Publications in Neutrosophics

Ashit Kumar Dutta. Analysis of side effects of chemotherapy treatment for cancer patients using Neutrosophic cognitive graphs (NCG). *International Journal of Applied Engineering Research* ISSN 0973-4562 Volume 11, Number 1 (2016) pp. 401-403.

Ashit Kumar Dutta, Ranjit Biswas, Nasser Saad AL-Arifi. A Study of Neutrosophic technology to retrieve Queries in Relational Database. A Study of Neutrosophic technology to retrieve Queries in Relational Database. *International Journal of Computer Science & Emerging Technologies (E-ISSN: 2044-6004)*, Volume 2, Issue 1, Volume 2, Issue 1, 133-138.

Dr.

Azeddine Elhassouny

Affiliation

Department of Software Engineering
ENSIAS - National High School of IT and systems analysis
Mohammed V University in Rabat
BP 713 Agdal Rabat / MOROCCO



Profile

Joined ENSIAS - National High School of IT and systems analysis at Mohammed V University in Rabat Morocco in 2014. MS and PhD in mathematics, computer science and applications (in 2008 and 2013, respectively).

Research Interests

neutrosophics; fusion theory; multiple criteria decision making (MCDM); multimedia signal processing; image and video recovery and compression, indexing and retrieval; computer vision; pattern recognition; classification; machine learning.

List of Publications in Neutrosophics

Azeddine Elhassouny, Florentin Smarandache. Neutrosophic simplified TOPSIS. ENSIAS, Mohammed V University In Rabat, Morocco; University of New Mexico, United States, IEEE WCCI 2016, Vancouver, Canada.

Mohamed Abd Elfattah

PhD candidate

Affiliation

Mansoura University / EGYPT



Profile

PhD student in Computer science at Mansoura University, Egypt.
Working in document analysis field.

Neutrosophic Research

Applied neutrosophic theory to degraded historical documents imaging. The input RGB image is transformed into the NS domain, which is described using three subsets, namely the percentage of truth in a subset, the percentage of indeterminacy in a subset, and the percentage of falsity in a subset. The entropy in NS is employed to evaluate the indeterminacy with a λ -mean operation used to minimize indeterminacy. Finally, the historical document image is binarized using an adaptive thresholding technique. Experimental results demonstrated that the proposed approach is able to select appropriate image thresholds automatically and effectively, while it is shown to be less sensitive to noise and to perform better compared with other binarization algorithms.

List of Publications in Neutrosophics

Amin, Khalid M., M. Abd Elfattah, Aboul Ella Hassanien, and Gerald Schaefer. A binarization algorithm for historical arabic manuscript images using a neutrosophic approach. 9th International Conference on Computer Engineering and Systems (ICCES), pp. 266-270. IEEE, 2014

Aboul Ella Hassanien, Mohamed Abdelfattah, Khaled M. Amin, Sherihan Mohamed. A Novel Hybrid Binarization Technique for Images of Historical Arabic Manuscripts, Studies in Informatics and Control, ISSN 1220-1766, vol. 24 (3), pp. 271-282, 2015

Shaimaa M. Elnazer

PhD candidate

Affiliation

Mansoura University / EGYPT



Profile

Born in 1986. BSc of Engineering from Mansoura University, 2008. Master degree from Communication and Electronic Department of the same university, 2013. Currently working on her PhD thesis, "Brain tumor detection using neutrosophics".

List of Publications in Neutrosophics

- Shaima Elnazer. Video Based License Plate Detection Algorithm, November 2011. (IEEE)
- Shaima Elnazer. Echocardiography heart diagnosis using Artificial Neural Networks, December 2012.
- Shaima Elnazer. Brain segmentation technique using fuzzy, 2014.
- Shaima Elnazer. Curvature Anisotropic Gaussian Filter for MRI brain Images enhancement and edge preserving, 2015.
- Shaima Elnazer, Mohamed Morsy, Mohy Eldin A. Abo-Elsooud. Brain Tumor Segmentation using hybrid of both Neutrosophic Modified Nonlocal Fuzzy C-mean and Modified Level sets. International Journal of Science and Research (IJSR), Volume 5, Issue 2, February 2016.

Ahmed Kuder Essa Al-Jubouri

Electrical Engineering

Affiliation

Faculty of Basic Education
Telafer University
Mosul / IRAQ



Profile

Born in 1985, Mosul, Iraq. Bachelor degree in Electrical power engineering from the Technical college of Mosul, Iraq (2007-2008). Specialization: Electrical Power Engineering, Mathematics & Physics (Neutrosophic logic, Fuzzy Logic, Cosmology). A Honorary Membership of Neutrosophic Science International Association as of April 26, 2016.

Neutrosophic Research

Interested in neutrosophic logic and having innovative ideas to improve the mathematical tools, working to construct the duality theory for neutrosophic geometric programming, put some topological diagrams for partial metric space in neutrosophic calculus.

Research Interests

neutrosophic logic; neutrosophic geometric programming; neutrosophic relation equations; fuzzy relation equations; fuzzy geometric programming; geometric programming; applied geometric programming in electrical power engineering.

List of Publications in Neutrosophics

Smarandache, F., Khalid, H. E., Essa, A. K., Ali M. (2016). The Concept of Neutrosophic Less than or Equal: A New Insight in Unconstrained Geometric Programming. Critical Review (CR). Volume XII : 72-81.

Smarandache, F., Khalid, H. E., Essa, A. K. (2016). A New Order Relation on the Set of Neutrosophic Truth Values. Collective book "New Trends in Neutrosophic Theories and Applications", Europa Nova, Brussels.

WORKS IN PROGRESS

Essa, A. K., Khalid, H. E. Neutrosophic Precalculus and Neutrosophic Calculus (translating from English to Arabic).

Essa, A. K., Khalid, H. E. A review on neutrosophic pre-calculus and neutrosophic calculus.

Essa, A. K. Khalid, H. E. The Concept of Neutrosophic Convergence.

SEMINARS

Neutrosophic Geometric Programming (2014). Dep. of Math., College of Science / Al-Mustansiriya University / Baghdad – Iraq.

Selim Eraslan



Affiliation

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Kırıkkale Vocational School
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List of Publications in Neutrosophics

Articles

- Deli İrfan, Eraslan Selim, Çağman Naim, (2016). ivnpiv-Neutrosophic soft sets and their decision making based on similarity measure, *Neural Computing & Applications*, 27(6), 30-40. ISSN 0941-0643 [SCI-Expanded]
- Eraslan Selim, Karaaslan Faruk, (2015). A Group Decision Making Method Based On TOPSIS Under Fuzzy Soft Environment, *Journal of New Theory*, 3, 30-40. (Yayın No: 2288860)
- Eraslan Selim, (2015). A Decision Making Method via TOPSIS On Soft Sets, *Gaziosmanpaşa Üniversitesi Fen-Edebiyat Fakültesi, Journal of New Results in Science* 8, 57-71. (Yayın No: 2289607)

Papers

- Eraslan Selim, Çağman Naim, (2015). A Decision Making Method by Combining TOPSIS and Grey Relation Method under Fuzzy Soft Set, *The 4th International Fuzzy Systems Symposium (FUZZYSS'15) (Tam Metin Bildiri)* (Yayın No: 2291255)
- Eraslan Selim, Çağman Naim, (2016). Reduction Theory in Soft Sets and its Matrix Representation, *International Conference on Mathematics and Mathematics Education (ICMME-2016) (Tam Metin Bildiri)* (Yayın No: 2833266)

Dr.

Mohammadreza Faraji

Postdoctoral researcher

Affiliation

Department of Computer Science
Utah State University
Logan, UT 84322-4205 / USA



Profile

PhD in computer science from Department of Computer Science at Utah State University. MSc in Social Economics Systems Engineering from Amirkabir University of Technology of Tehran. Published several notable articles in highly-ranked computer science journals: among these the journals *Neurocomputing*, *IET Computer Vision*, *IEEE Signal Processing Letters* and *Applied Soft Computing*. More than 60 citations to the articles on his Google Scholar profile.

Neutrosophic Research

Proposed a new cluster validity index, called Exponential Compactness and Separation (ECAS) index. This index ensures that the clusters are homogenous with respects to their included data while also being heterogeneous with respects to other clusters. Dr. Faraji's ECAS index uses an exponential function, thereby generating a more robust set of clusters. Another innovation is his method for creating a type-2 fuzzy logic system based on an indirect approach. This approach was made possible through the strength of his ECAS index, and, as a type-2 system, exhibited a greatly enhanced ability to handle uncertainty. Finally, to demonstrate the effectiveness of his type-2 fuzzy logic system, Dr. Faraji applied his system to predict carbon monoxide concentrations in the air of Tehran, for which it proved to be highly accurate. In addition, he expanded the idea to solve the face recognition problem by using the neutrosophic set-based approach (the expanded version of the fuzzy set) to evaluate the truth, falsity, and indeterminacy of each data set and therefore simultaneously remove noise and enhance facial features in the original face image to achieve impressive face recognition accuracy.

Research Interests

image processing; computer vision; fuzzy systems; neutrosophic systems.

Dr.

Daniela Gîfu

Researcher Associate professor

Affiliation

Faculty of Computer Science
"Alexandru Ioan Cuza" University
Bd. Carol I no. 11, 700506, Iasi / ROMANIA



Profile

Researcher in the NLP-Group@UAIC-FII, Faculty of Computer Science, (UAIC), Romania, associate professor at the same university, and affiliated scientific researcher at the Center for Advanced Research in Applied Informatics, University of Craiova, Romania. PhD in Philosophy (2010), with a theme related to Communication (a study of the symbolic violence in the political discourse).

Following a very successful research stage in the Faculty of Computer Science, Mrs. Gîfu pursues her investigations in the direction of the neutrosophic elements in discourse, but this time from a computational linguistics perspective. Postdoctoral research in 2013 at UAIC, both of them centered on the study of public discourses (political and journalistic). As such, she decided to pursue a second PhD, in Computer Science, in cotutelle: Romanian Academy and "Alexandru Ioan Cuza" University of Iasi, Romania.

(Co-)authored several books (13) and journal articles (dozens) indexed by ISI Web of Science, ELSEVIER, SPRINGER, DBLP, etc., and more than 60 conference papers, many of them focused on problems of neutrosophics and semantic analysis. Member of the organizing committees of the 18th international events, and member of the scientific programme committees of the 17th international events such as IJCAI, EUROLAN, ConsILR, LREC, RoCHI, RUMOUR, ICOSST, MFOI, ACIIDS, FTRA AIM, etc. and has reviewed for numerous journals (Society of Electronics and Computer Engineering Journal, CEITJ, Avanti Publishers, Social Sciences and Educational Research Review, etc.). In this context, she is invited as keynote speaker or moderator in international conferences as ICOSST, FIT, ConsILR, MFOI, RUMOUR, etc.

Research Interests

paradoxism; neutrosophics; natural language processing; semantic relations; discourse analysis; text categorization; sentiment analysis; lexical semantics in text processing; machine learning.

List of Publications in Neutrosophics

PAPERS (selective)

Mirela Teodorescu, Daniela Gîfu, Florentin Smarandache. Maintenance Operating System Uncertainties Approached through Neutrosophic Theory, at the IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2016), hosted by IEEE World Congress on Computational Intelligence (IEEE WCCI), 24-29 July 2016, Vancouver, Canada - under publication at the IEEE Transactions on Fuzzy Systems Journal, published by IEEE Computational Intelligence Society, ISSN: 1063-6706, Impact Factor = 8.746 (2014).

Florentin Smarandache, Daniela Gîfu, Mirela Teodorescu. Neutrosophic elements in discourse in Social Sciences and Education Research Review, vol. 2/1, 2015: 25-32, ISSN: 2393-1264, ISSN-L: 2392-9683.

BOOK CHAPTERS (selective):

Florentin Smarandache, Daniela Gîfu, Mirela Teodorescu. Chapter 1 - Neutrosophic, a Possible Method of Process Analysis Uncertainties Solving in Uncertainty Communication Solution in Neutrosophic Key, Smarandache, F., Teodorescu, B, and Teodorescu, M. (eds.), EuropaNova asbl, Bruxelles, Belgium 2015: 9-23, ISBN: 978-1-59973-371-5.

BOOK REVIEWS (selective):

Daniela Gîfu, Mirela Teodorescu. Neutrosophic routes in multiverse of communication, in Neutrosophic Sets and Systems, F. Smarandache and M. Ali (eds.), EuropaNova, Brussels, Belgium, vol. 6/2014, pp. 81-83, ISBN 978159973513 – indexed in BDI.

Dr.

Yanhui Guo

Assistant professor

Affiliation

Department of Computer Science
University of Illinois at Springfield
One University Plaza, Springfield
Illinois 62703-5407 / USA



Profile

BS in Automatic Control from Zhengzhou University, China. MS in Pattern Recognition and Intelligence System from Harbin Institute of Technology, China. PhD in the Department of Computer Science, Utah State University, USA. Currently, assistant professor in the Department of Computer Science at the University of Illinois at Springfield. Published more than 50 journal papers and 19 top conference papers, completed 11 grant funded research projects by 2015, and worked as an associate editor of international journals, reviewers for top journals and conferences.

Neutrosophic Research

Firstly applied neutrosophic set into image processing research area in 2008 and published many research works based on neutrosophic set, such as image denoising, speckle reduction, segmentation, thresholding, medical image segmentation and detection, computer aided detection and diagnosis, feature extraction, and data clustering and classification.

Research Interests

image processing; machine learning; computer aided detection/ diagnosis; big data analytics; neutrosophic theory.

List of Publications in Neutrosophics

Papers

- Khalid M. Amin, A. I. Shahin, Yanhui Guo. A Novel Breast Tumor Classification Algorithm Using Neutrosophic Score Features, *Measurement*, Vol. 81, pp. 210-220, 2016.
- Yanhui Guo, Abdulkadir Şengür. NCM: Neutrosophic c-means clustering algorithm, *Pattern Recognition*, Vol. 48, No. 8, pp. 2710-2724, 2015.
- Yanhui Guo, Abdulkadir Şengür. NECM: Neutrosophic evidential c-means clustering algorithm, *Neural Computing and Applications*, Vol. 26, No. 3, pp. 561-571, 2015.
- Yanhui Guo and Abdulkadir Şengür. A novel 3D skeleton algorithm based on neutrosophic cost function, *Applied Soft Computing*, Vol. 36, No. C, pp. 210-217, 2015.
- Yanhui Guo, Abdulkadir Şengür, Jun Ye. A Novel Image Thresholding Algorithm Based on Neutrosophic Similarity Score, *Measurement*, Vol. 58, pp. 175–186, 2014.
- Yanhui Guo, Abdulkadir Şengür. A novel image segmentation algorithm based on neutrosophic similarity clustering, *Applied Soft Computing*, Vol. 25, pp. 391–398, 2014.
- Yanhui Guo, Abdulkadir Şengür. A novel image edge detection algorithm based on neutrosophic set, *Computers & Electrical Engineering*, Vol. 40, No. 8, pp. 3–25, 2014.
- Yanhui Guo, Chuan Zhou, Heang-Ping Chan, Aamer Chughtai, Jun Wei, Lubomir M. Hadjiiski, Ella A. Kazerooni. Automated iterative neutrosophic lung segmentation for image analysis in thoracic computed tomography, *Medical Physics*, Vol. 40, No. 8, pp. 081912-1-11, 2013.
- Yanhui Guo, Abdulkadir Sengur. A Novel Color Image Segmentation Approach Based on Neutrosophic Set and Modified Fuzzy C-Means, *Circuits, Systems, and Signal Processing*, Vol. 32, No. 4, pp. 1699-1723, 2013.
- Yanhui Guo, Abdulkadir Sengur. A Novel Image Segmentation Algorithm Based on Neutrosophic Filtering and Level Set, *Neutrosophic Sets and Systems*, Vol. 1, pp. 46-49, 2013.

- Ebru Karabatak, Yanhui Guo, Abdulkadir Sengur. Modified neutrosophic approach to color image segmentation, *Journal of Electronic Imaging*, Vol. 22, No. 1, pp. 013005-013015, 2013.
- J. Mohana, V. Krishnaveni, Yanhui Guo. MRI denoising using nonlocal neutrosophic set approach of Wiener filtering, *Biomedical Signal Processing and Control*, Vol. 8, No. 6, pp. 779-791, 2013.
- J. Mohan, V. Krishnaveni, Yanhui Guo. A New Neutrosophic Approach of Wiener Filtering for MRI Denoising, *Measurement Science Review*, Vol.13, No. 4, pp. 1335-8871, 2013.
- J. Mohan, V. Krishnaveni, Yanhui Guo. Non Local Neutrosophic Set Approach of Wiener Filtering for MRI Denoising, *Archives Des Sciences Journal*, Vol. 66, No. 2, pp. 125-136, 2013.
- J. Mohan, A. P. Thilaga Shri Chandra, V. Krishnaveni, Yanhui Guo. Image Denoising Based on Neutrosophic Wiener Filtering, *Advances in Intelligent Systems and Computing*, Vol. 177, pp. 861-869, 2013.
- J. Mohan, V. Krishnaveni, Yanhui Guo. Performance Anaylysis of Neutrosophic Set Approach of Median Filtering for MRI Denoising, *International Journal of Electronics and Communication Engineering And Technology*, Vol. 3, No. 2, pp. 148-163, 2012.
- J. Mohan, V. Krishnaveni, Yanhui Guo. Performance Comparison of MRI Denoising Techniques Based on Neutrosophic Set Approach, *European Journal of Scientific Research*, Vol. 86, No. 3, pp. 307-318, 2012.
- J. Mohan, A.P. Thilaga Shri Chandra, V. Krishnaveni, Yanhui Guo. Evaluation of Neutrosophic Set Approach Filtering Technique for Image Denoising, *The International Journal of Multimedia & Its Applications (IJMA)*, Vol.4, No.4, pp. 73-81, 2012.
- Abdulkadir Sengur, Yanhui Guo. Color Texture Image Segmentation Based on Neutrosophic Set and Wavelet Transformation, *Computer Vision and Image Understanding*, Vol. 115, No. 8, pp. 1134-1144, 2011.

- H.D. Cheng, Yanhui Guo, Yingtao Zhang. A Novel Image Segmentation Approach Based on Neutrosophic Set and Improved Fuzzy C-means Algorithm, *New Mathematics and Natural Computation*, Vol. 01, No. 07, pp. 155-171, 2011.
- Yanhui. Guo, H.D. Cheng. New Neutrosophic Approach to Image Segmentation, *Pattern Recognition*, Vol. 42, No. 5, pp. 587-595, 2009.
- Yanhui Guo, H.D. Cheng, Yingtao Zhang. A New Neutrosophic Approach to Image Denoising, *New Mathematics and Natural Computation*, Vol. 05, No. 03, pp.653-662, 2009.
- H.D. Cheng, Yanhui Guo. A new neutrosophic approach to image thresholding, *New Mathematics and Natural Computation*, Vol. 4, No. 3, pp. 291-307, 2008.

Conference Papers

- J. Mohan, V. Krishnaveni, Yanhui Guo, K. Jeganathan. MRI Denoising Based on Neutrosophic Wiener Filtering, 2012 IEEE international conference on Imaging Systems and Techniques (IST 2012), Manchester, UK, July 16-17, 2012.
- J. Mohan, V. Krishnaveni, Yanhui Guo. Validating the neutrosophic approach of MRI denoising based on structural similarity, The IET Image Processing Conference 2012, London, UK, July, 2012.
- J. Mohan, A. P. Thilaga Shri Chandra, V. Krishnaveni, Yanhui Guo. Image denoising based on Neutrosophic Wiener Filtering, Second International Conference on Digital Image Processing and Pattern Recognition (DPPR-2012), Chennai, India, July, 2012.
- Yanhui Guo, Chuan Zhou, Heang-Ping Chan, Amer R. Chughtai, Lubomir M. Hadjiiski, Ella A. Kazerooni. Computerized Pulmonary Embolism (PE) Detection in Computed Tomographic Pulmonary Angiography (CTPA): Neutrosophic Morphologic Lung Segmentation, 97th Scientific Assembly and Annual Meeting of the Radiological Society of North America, RSNA, November 28-December 3, 2011.

- Mohan Jayaraman, Krishna Veni, Yanhui Guo. A Neutrosophic Approach of MRI Denoising, 2011 International Conference on Image Information Processing, ICIIP 2011, Wagnaghat, Shimla, Himachal Pradesh, India, 2011.
- Yanhui Guo, H.D. Cheng, Wei Zhao, Yingtao Zhang. A New Neutrosophic Approach to Image Thresholding, the 11th Joint Conference on Information Science on Computer Vision, Pattern Recognition and Image Processing, Shenzhen, China, 2008.
- Yanhui Guo, H.D. Cheng, Wei Zhao, Yingtao Zhang. A New Neutrosophic Approach to Image Denoising, the 11th Joint Conference on Information Science on Computer Vision, Pattern Recognition and Image Processing, Shenzhen, China, 2008.
- Yanhui Guo, H.D. Cheng, Wei Zhao, Yingtao Zhang. A Novel Image Segmentation Algorithm Based on Fuzzy C-means Algorithm and Neutrosophic Set, the 11th Joint Conference on Information Science on Computer Vision, Pattern Recognition and Image Processing, Shenzhen, China, 2008.

Dr.

Savita Gupta

Professor

Affiliation

Computer Science & Engineering
University Institute of Engineering & Technology
Panjab University, Chandigarh / INDIA



Profile

BTech from TITS, Bhiwani (Haryana), in 1992. ME from TIET, Patiala, Punjab, in 1998, both in computer science and engineering. PhD in 2007 in the field of Medical Image Processing. Teaching since 1992. Published more than 90 papers in refereed International Journals and conference proceedings. Presently, working as Professor in the Department of CSE, University Institute of Engg. & Technology, Panjab University, Chandigarh. Completed various research projects funded by various agencies like DST, AICTE and MHRD.

Neutrosophic Research

Published four research papers utilizing neutrosophic theory in medical image processing.

Research Interests

medical image processing; wavelet based image compression and denoising; network security; wireless sensor networks; cognitive enhancement.

List of Publications in Neutrosophics

Deepika Koundal, Savita Gupta, Sukhwinder Singh. Automated Delineation of Thyroid Nodules in Ultrasound Images using Spatial Neutrosophic Clustering and Level Sets, Applied Soft Computing, vol. 40, pp. 86–97, 2016.

(ELSEVIER) (SCI indexed & IF: 3.222) DOI:
10.1016/j.asoc.2015.11.035

Deepika Koundal, Savita Gupta, Sukhwinder Singh. Speckle reduction method for thyroid ultrasound images in neutrosophic domain, IET Image Processing, vol. 10, no. 2, pp. 167-75, 2016. (SCI indexed & IF: 0.753) DOI: 10.1049/iet-ipr.2015.0231

Deepika Koundal, Savita Gupta, Sukhwinder Singh. Speckle Reduction filter in Neutrosophic domain, 2nd International Conference of Biomedical Engineering and Assisted Technologies (BEATS), pp.786-790, 2012

Deepika Koundal, Savita Gupta, Sukhwinder Singh. Applications of Neutrosophic and Intuitionistic Fuzzy Set on Image Processing, National Conference on Green Technologies: Smart and Efficient Management (GTSEM-2012) SLIET, Longowal, 2012.

Dr.

Nasruddin Hassan

Associate professor

Affiliation

School of Mathematical Sciences
Faculty of Science and Technology
Universiti Kebangsaan Malaysia
Bangi 43600 Selangor DE / MALAYSIA



Profile

BSc in Mathematics from Western Illinois University USA. MSc in Applied Mathematics from Western Michigan University USA. PhD degree in Applied Mathematics from Universiti Putra Malaysia. Currently, Associate Professor at the School of Mathematical Sciences at University Kebangsaan Malaysia.

Research Interests

decision making; operations research; fuzzy sets; numerical convergence.

List of Publications in Neutrosophics

Ashraf Al-Quran, Nasruddin Hassan. Neutrosophic vague soft expert set theory. 2016. Journal of Intelligent and Fuzzy Systems, 30(6):3691-3702, doi: 10.3233/IFS-162118 (IOS Press ISSN: 1064-1246, SCOPUS, ISI Q2 2014 IF 1.812)

Ibrahim Mohammed Hezam Al-Mishanah

PhD candidate

Affiliation

Department of Computer
Faculty of Education
Ibb University, Ibb city / YEMEN



Profile

BSc in Education with Major in Mathematics, with a Cumulative Grade of Distinction with Honors (91.75 %) from College of Education, Al-Nadirah, Ibb University, Yemen. Pre-Master courses of Pure Math (2009) from Math. Department, Faculty of Science, Helwan university, Cairo, Egypt. MSc in Operations Research from the Department of Mathematics, Faculty of Science, Helwan University, Cairo, Egypt (2011). Since 2012, PhD student in Operations Research and Decision Support Department - Faculty of Computers and Information, Menofia University, Egypt. Since 2004, Assistant Teacher (Demonstrator) in Mathematics Department, College of Education, Al-Nadirah, IBB University, Yemen.

List of Publications in Neutrosophics

- Ibrahim M. Hezam, M Abdel-Baset, F. Smarandache. Taylor Series Approximation to Solve Neutrosophic Multiobjective Programming Problem, *Neutrosophic Sets and Systems*, Vol. 10, 2015
- Ibrahim M. Hezam, Mohamed Abdel-Baset, F. Smarandache. Neutrosophic Goal Programming, *Neutrosophic Sets and Systems*, Vol. 11, 2016

Dr.

Alice Ionescu

Lecturer

Affiliation

University of Craiova
13-15 A.I.Cuza Street
Craiova, 200585 / ROMANIA



Profile

Senior lecturer PhD in the Department of Romance and Classical Languages at The Faculty of Letters, University of Craiova. Teaching French Linguistics, French Grammar and French Language Skills for the translators. Published her doctoral thesis *Modalisateurs illocutoires et argumentation* in 2008 and a booklet in the area of French linguistics: *Exercices de pragmatique et de linguistique textuelle* in 2011, two French manuals and about 40 papers in the field of Linguistics and French as a Foreign Language.

Research Interests

discourse analysis; contrastive grammar; pragmatics and text linguistics; neutrosophic applications on natural languages logic; argumentation and press communication.

List of Publications in Neutrosophics

Alice Ionescu. Neutralité neutrosophique et expressivité dans le style journalistique, in *Neutrosophic Sets and Systems*. An International Journal in Information Science and Engineering, vol. 10, 2015, Gallup, USA. <http://fs.gallup.unm.edu/NSS/NSS-10-2015.pdf>

Alice Ionescu. Le paradoxe en argumentation, in F. Smarandache, B. Teodorescu, M. Teodorescu, (eds.), *Uncertainty Communication Solution in Neutrosophic Key*, Europa Nova asbl, Bruxelles, pp. 24-36

Stefan Vlăduțescu, Alice Ionescu. L'antinomie ineffable / exprimable en langue est-elle irréductible?, in Bunaiasu, C., Opran, R.E., Voinea, D.V., Creativity in Social Sciences, Proceedings of CIL 2015: Second Edition of International Conference of Humanities and Social Sciences - Creativity, Imaginary, Language, Craiova, Romania, 15-16 May 2015, pp. 188-195, ISBN 978-606-11-4798-4

Alice Ionescu. Argumentation et logique neutrosophique - quels rapports?, in Vlăduțescu, Șt., Smarandache, F., Gîfu, D., Tenescu, A. (coord). Topical communication uncertainties, Eds. Sitech-Zip Publishing, Craiova, pp. 191-208

J. Martina Jency

PhD Scholar



Affiliation

Nirmala College for Women
Coimbatore – 641018
Tamilnadu / INDIA

Profile

Assistant Professor for Dhanalakshmi Srinivasan College of Engineering (2011-12) and at Coimbatore Institute of Engineering and Technology (2012-15). Currently concentrating on her research work (PhD Scholar in Mathematics, Nirmala College for Women, Coimbatore, Tamilnadu, India).

List of Publications in Neutrosophics

- J. Martina Jency. Fuzzy Neutrosophic Soft Topological Spaces, International Journal of Mathematical Archives, 4(10), 2013, 225-238
- J. Martina Jency. Fineutro Sets and Fineutro Topological Spaces, Elixir Appl.Math 70(2014), 23951-23958
- J. Martina Jency. FN Continuity in Fuzzy Neutrosophic Topological Spaces, ARJMD Asian Academic Research journal of Multidisciplinary, 330-340
- J. Martina Jency. More on Fuzzy Neutrosophic Sets and Fuzzy Neutrosophic Topological Spaces, International Journal of Innovative Research and Studies, May 2014, Vol. 3, Issue 5, 643-652
- J. Martina Jency. Fuzzy neutrosophic equivalence relations, International journal of innovative research and development, Jan (2016), Vol. 5, Issue 1, 219-227

- J. Martina Jency. Fuzzy neutrosophic relations, International journal of research-Granthaalayah, Vol. 4, No (2) (2016), 17-30
- J. Martina Jency. Fuzzy neutrosophic subgroups, Bulletin of Mathematics and statistics research, Vol. 4, Issue 1 (2016), 83-94
- J. Martina Jency. Fuzzy neutrosophic subgroupoids, Asian Journal of applied sciences (Annexure II journal), Vol. 4, No. 1 (2016), 161-168
- J. Martina Jency. Adjustable and mean potentiality approach on decision making, Neutrosophic sets and system, Vol. 11,2016,12-20
- J. Martina Jency. Application of fuzzy neutrosophic relation in decision making. (Communicated)

Dr.

Huda Esmail Khalid Esmail Al-Jumaily

Lecturer

Affiliation

Department of Mathematics
College of Basic Education
Telafer University / IRAQ



Profile

Born in 26/9/1974, Mosul, Iraq. BA from the Department of Mathematics, Faculty of Science, Mosul University (1998). MSc from the same university, with the thesis "The Use of Spectral Envelop in the Rhythms of Arabic Poetry" (2001). PhD from the same university, with the thesis "Investigation in the Sensitivity Analysis in the Generalized Geometric Programming Problems" (2010). Member in *Telesio-Galilei Academic of Science*. Editorial board member in *Journal of High Energy Physics, Gravitation and Cosmology*. A Honorary Membership of *Neutrosophic Science International Association* as of May 19, 2015. Editorial board member in *Neutrosophic Sets and Systems* journal. Member of a Working Group to Follow up the *National Strategy for the Development of Higher Education* in Iraq in the University of Telafer. Head of the Scientific Committee of the Department of Mathematics, Faculty of Basic Education in the University of Telafer (since 2012). Gain an Appreciation Certification from the Minister of Higher Education to Participate in *Higher Education Award Contest* in Iraq at 2013.

Research Interests

neutrosophic logic; neutrosophic geometric programming; fuzzy neutrosophic relation equations; fuzzy geometric programming; general geometric programming; applied of geometric programming; geometric programming; fuzzy relation equations.

List of Publications in Neutrosophics

Papers

- Khalid, H. E. (2016). The Novel Attempt for Finding Minimum Solution in Fuzzy Neutrosophic Relational Geometric Programming (FNRGP) with (max, min) Composition. *Neutrosophic Sets and Systems (NSS)*, Vol. 11: 107-112
- Khalid, H. E. (2015). An Original Notion to Find Maximal Solution in the Fuzzy Neutrosophic Relation Equations (FNRE) with Geometric Programming (GP). *Neutrosophic Sets and Systems (NSS)*, Vol. 7: 3-8
- Smarandache, F., Khalid, H. E., Essa, A. K., Ali M. (2016). The Concept of Neutrosophic Less than or Equal: A New Insight in Unconstrained Geometric Programming. *Critical Review (CR)*. Volume XII: 72-8
- Smarandache, F., Khalid, H. E., Essa, A. K. (2016). A New Order Relation on the Set of Neutrosophic Truth Values. In *New Trends in Neutrosophic Theories and Applications*, collective book, Europa Nova, Brussels

Unpublished Works

- Khalid, H. E., Essa, A. K. *Neutrosophic Precalculus and Neutrosophic Calculus*, by F. Smarandache (translating from English to Arabic).
- Essa, A. K., Khalid, H. E. A review on neutrosophic pre-calculus and neutrosophic calculus, offprint.
- Essa, A. K., Khalid, H. E. The Concept of Neutrosophic Convergence, offprint.

Seminars

- Neutrosophic Relation Equations via Geometric Programming (2015), Dep. of Math., College of Basic Education, Al-Mustansiriya University
- Fuzzy Geometric Programming (2015), Dep. of Math., College of Science, Al-Mustansiriya University
- Fuzzy Relation Equations with (max-min) operator (2012), Dep. of Math., College of Basic Education / Telafer, Mosul University

Sensitivity Analysis in Geometric Programming Problems (2009),
Dep. of Math., College of Computer Science and
Mathematics, Mosul University

Dr.

Faruk Karaaslan

Assistant professor

Affiliation

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Profile

MSc (2007) and PhD (2013) from Department of Mathematics, Faculty of Art and Sciences, Gaziosmanpaşa University (Turkey). Currently, assistant professor in Department of Mathematics, Faculty of Sciences, Çankırı Karatekin University, Turkey. Referee of many international journals.

Neutrosophic Research

Published several papers on neutrosophic soft sets, possibility neutrosophic soft sets, single valued neutrosophic soft set and single valued neutrosophic refined soft set in various international refereed journals. Also studied the similarity measure and correlation coefficient of single valued neutrosophic soft set.

Research Interests

algebra; fuzzy set theory; soft set theory; neutrosophic set theory; decision making.

List of Publications in Neutrosophics

- F. Karaaslan. Neutrosophic soft sets with applications in decision making, *International Journal of Information Science and Intelligent System*, 4(2), 1-20, 2015
- F. Karaaslan. Correlation coefficient between possibility neutrosophic soft sets, *Mathematical Science Letter*, 5(1), 71-74, 2016

- F. Karaaslan. Correlation coefficients of single-valued neutrosophic refined soft sets and their applications in clustering analysis, *Neural Computing & Applications*, 27(2), 2016, DOI 10.1007/s00521-016-2209-8
- F. Karaaslan. Possibility neutrosophic soft set and PNS-decision making method, *Applied Soft Computing*, DOI: 10.1016/j.asoc.2016.07.013
- F. Karaaslan. Similarity measure between possibility neutrosophic soft sets and its applications. (Accepted)

Dr.

Serkan Karatas



Affiliation

Department of Mathematics
Ordu University – 52200 / TURKEY

Profile

BSc from Ondokuzmayıs University Samsun (2001). MSc from Department of Mathematics, Gaziosmanpasa University Tokat (2004). PhD from Department of Mathematics, Gaziosmanpasa University Tokat, with the thesis “Soft Topological Structures” (2012).

Research Interests

fuzzy sets; classical and fuzzy logic; many-valued logic; fuzzy measure methods; measure of fuzziness; soft topology; soft function; soft point.

List of Publications in Neutrosophics

Papers

- S. Karatas and N. Çağman. Fuzzy measure methods and between relationships, SAÜ Fen Bilimleri Enstitüsü Dergisi, 9(2) (2005)
- N. Çağman, S. Karatas, S. Enginoğlu. Soft topology, Computers and Mathematics with Applications 62 (2011) 351-358
- N. Çağman, S. Karatas. Intuitionistic fuzzy soft set theory and its decision making, Journal of Intelligent and Fuzzy Systems 24(4) (2013) 829-836. (SCI)
- S. Karatas, M. Akdağ. On intuitionistic fuzzy soft continuous functions, Journal of New Results in Science 4 (2014) 55-70
- V. Türkmenoğlu, M. Aktas, S. Karatas, H. İ. Okumus. Soft set-based switching faults decision making in DTC induction motor drives, Journal of Circuit Systems and Computer 24(2) (2015), (DOI:10.1142/S0218126615500218) (SCI)

- S. Karatas, M. A. İsleyen. Connectedness on Intuitionistic fuzzy soft topological spaces, *Journal of New Theory* 1 (2015) 2-16
- M. Akdağ, S. Karatas, F. Erol. Upper and lower continuity of fuzzy soft multifunctions, *Journal of New Theory* 1 (2015) 59-68
- S. Karatas. Hesitant Fuzzy topological spaces and some properties, *Contemp. Analysis and Appl. Mathematics* 3(1) (2015), 62-77
- A. M. Abd El-Latif, S. Karatas. Supra b-open soft sets and supra b-soft continuity on soft topological spaces, *Journal of Math. and Computer Applications Research* 5(1) (2015)
- E. Set, S. Karatas, İ. Mumcu. Fuzzy Ostrowski type inequalities for (m)-convex functions, *J. of New Theory*, 6 (2015), 54-65
- F. Karaaslan, S. Karatas. A new approach to bipolar soft sets and applications, *Discrete Mathematics, Algorithms and Applications*, DOI:10.1142/S1793830915500548
- İ. Deli, S. Karatas. Interval valued intuitionistic fuzzy soft set theory and its decision making, *Journal of Intelligent and Fuzzy Systems*, (in press) (SCI)
- S. Karatas, B. Kılıç, M. Tellioglu. On fuzzy soft connected topological spaces, *Journal of Linear and Topological Algebra*, 4(3) (2015), 229–240
- F. Karaaslan and S. Karatas, OR and AND-products of ifp-intuitionistic fuzzy soft sets and their applications in decision making, *Journal of Intelligent and Fuzzy Systems*, (in press) (SCI)
- S. Karatas and C. Kuru, A note on neutrosophic topology, (Submitted)
- S. Karatas and İ. Deli, On neutrosophic soft topological spaces, (Submitted)

Symposiums and Conferences

- N. Çağman and S. Karatas, Bulanıklık ve Olasılık, IV. Ulusal Mantık Matematik ve Felsefe Sempozyumu, 2006 İzmir-Foça

- N. Çağman, S. Karatas and F. Karaaslan, Sezgisel Bulanık Esnek Kümeler ve Aralarındaki Benzerlik Ölçümü, 2010 Kayseri
- N. Çağman and S. Karatas, Intuitionistic Fuzzy Soft Matrix Theory and Its Decision Making, The 4th Congress of the Turkish World Mathematical Society, 2011 Azerbaijan
- N. Çağman and S. Karatas, Intuitionistic Fuzzy Soft Sets and Its Decision Making, The Second International Fuzzy Systems Symposium, 2011 Ankara
- S. Karatas, Neutrosophic Esnek Topolojik Yapılar, 9. Ankara Matematik Günleri, 12-13 Haziran 2014
- S. Karatas and N. Çağman, A new approach to intuitionistic fuzzy soft matrices, Karatekin Mathematics Days, 11-13 June 2014, Çankırı

Dr.

Madad Khan



Affiliation

Department of Mathematics
COMSATS Institute of Information Technology
Abbottabad / PAKISTAN

Profile

Post doc (Bio Mathematics), Department of Mathematics, University of Chicago, USA, 2014-15. Post doc (Computational Mathematics), School of Mathematics, University of Birmingham, UK, 2013. Visited The Center of Mathematical Sciences and Isaac Newton Institute for Mathematical Sciences, University of Cambridge, UK, July 10-11, 2013. Academic visitor of The Mathematical Institute University of Oxford, UK, from May 19, 2012 to June 6, 2012. Invited Speaker in *Third High Mile Conference on Nonassociative Mathematics*, August 11-17, 2013, University of Denver, Denver, Colorado, USA.

Fields of Research

Bio Mathematics (Genetics); Fuzzy Mathematics (Fuzzy Logics & Foundation, Decision Analysis, Fuzzy Algebra), Computational Mathematics (Programming in GAP); Pure Mathematics (Semigroups, AG-groupoids).

Research Interests

fuzzy differential equations; fuzzy mathematics; bio mathematics; applied algebra; semigroups; left almost semigroups; fuzzy algebra; applications of non associative structure in genetics; group algorithm programming; soft sets and related soft computing models; mathematical theories for modeling uncertainty; decision analysis; data mining; rough sets; granular computing; computational intelligence.

List of Publications in Neutrosophics

Papers

Madad Khan, Misbah Khurshid. Structural Properties of Neutrosophic Abel-Grassmann's Groupoids, *Critical Review*, Volume XI, 2015, 115-144

Madad Khan, Sania Afzal. Neutrosophic set approach for characterizations of left almost semigroups, *Neutrosophic Sets and Systems*, Vol. 11, 2016, 79-94

Books

Madad Khan, F. Smarandache, Tariq Aziz. *Fuzzy Abel Grassmann's Groupoids*, Educational Publisher, Columbus, Ohio, USA, 2015

Madad Khan, F. Smarandache, Saima Anis. *Theory of Abel Grassmann's Groupoids*, Educational Publisher, Columbus, Ohio, USA, 2015

Qaisar Khan

PhD student

Affiliation

Department of Mathematics and Statistics
International Islamic University
Islamabad / PAKISTAN



Profile

Currently, PhD student at the International Islamic University Islamabad (Pakistan); supervisor: Dr. Tahir Mahmood.

Research Interests

similarities measures; pattern recognition; neutrosophic set; single valued neutrosophic set; interval neutrosophic set; neutrosophic cubic set; neutrosophic hesitant fuzzy set.

List of Publications in Neutrosophics

Tahir Mahmood, Qaisar Khan. Interval neutrosophic finite switchboard state machine, African Mathematical Union and Springer-Verlag Berlin Heidelberg March 2016, DOI 10.1007/s13370-016-0416-1

Dr.

K. Kandasamy



Staunch Periyarist / INDIA

Profile

Till recently, worked as a guest professor in the Tamil Department of the University of Madras. Postgraduate MA degrees in Tamil Literature, Political Science, Saiva Siddhanta, Defence Studies, Education and History.

Research Interests

neutrosophy and uncertainty in Tamil society.

List of Publications in Neutrosophics

W.B.Vasantha Kandasamy, Florentin Smarandache, K. Kandasamy. *Fuzzy and Neutrosophic Analysis of Periyar's Views on Untouchability*, 385 p., Hexis, USA. ISBN: 1-931233-00-4

W.B.Vasantha Kandasamy, Florentin Smarandache, K. Kandasamy. *Reservation for Other Backward Classes in Indian Central Government Institutions like IITs, IIMs and AIIMs-A Study of the Role of Media using Fuzzy Super FRM models*, 445 p., Editura CuArt, Romania. ISBN: 1-59973-092-8

W.B.Vasantha Kandasamy, Florentin Smarandache, K.Amal, K. Kandasamy. *Fuzzy Analysis of School Dropouts and their Life After*, 146 p., Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-209-1

Prof. Dr.

W. B. Vasantha Kandasamy

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Affiliation

Department of Mathematics
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Profile

Professor in the Department of Mathematics, Indian Institute of Technology Madras, Chennai. Guided in the past decade 13 PhD scholars in the different fields of non-associative algebras, algebraic coding theory, transportation theory, fuzzy groups, and applications of fuzzy theory of the problems faced in chemical industries and cement industries. Also guided over 115 MSc and MTech projects.

Worked in collaboration projects with the Indian Space Research Organization and with the Tamil Nadu State AIDS Control Society. Presently working on a research project funded by the Board of Research in Nuclear Sciences, Government of India. Published 694 research papers. Authored over 100 books related to Neutrosophy.

On India's 60th Independence Day, Dr.Vasantha was conferred the Kalpana Chawla Award for Courage and Daring Enterprise by the State Government of Tamil Nadu in recognition of her sustained fight for social justice in the Indian Institute of Technology (IIT) Madras and for her contribution to mathematics. The award, instituted in the memory of Indian-American astronaut Kalpana Chawla who died aboard Space Shuttle Columbia, carried a cash prize of five lakh rupees (the highest prize-money for any Indian award) and a gold medal.

Research Interests

neutrosophic numbers; neutrosophic mathematical modelling; neutrosophic algebra; algebraic structures; neutrosophic graph theory; fuzzy and neutrosophic models for societal research; natural neutrosophic numbers and MOD structures.

List of Publications in Neutrosophics

- Groupoids, pp. 113, American Research Press, 2002, ISBN : 1-931233-61-6
- Semigroups, pp. 93, American Research Press, 2002, ISBN : 1-931233-59-4
- Semirings, Semifields..., pp. 120, American Research Press, 2002, ISBN: 1 931233-87-6
- Loops, pp. 127, American Research Press, 2002, ISBN : 1-931233-63-2
- Rings, pp. 220, American Research Press, 2002, ISBN : 1-931233-64-0
- Near-rings, pp. 199, American Research Press, 2002, ISBN : 1-931233-66-7
- Non-associative Rings, pp. 150, American Research Press, 2002, ISBN : 1-931233-69-1
- Bialgebraic Structures, pp. 270, American Research Press, 2003, ISBN : 1-931233-71-3
- Fuzzy Algebra, pp. 453, American Research Press, 2003, ISBN : 1-931233-74-8
- Linear Algebra, pp. 173, American Research Press, 2003, ISBN : 1-932301-93-3
- Fuzzy Cognitive Maps and Neutrosophic Cognitive Maps (with Prof. Florentin Smarandache), pp. 212, Hexis, USA. ISBN : 1-1-931233-76-4
- Analysis of Social Aspects of Migrant Labourers Living with HIV/AIDS using Fuzzy Theory and Neutrosophic Cognitive Maps (With Specific Reference to Rural Tamilnadu in India) (with Prof. Florentin Smarandache), pp. 471, Hexis, USA. ISBN : 1-931233-83-7
- Fuzzy Relational Equations and Neutrosophic Relational Equations (with Prof. Florentin Smarandache), pp. 301, Hexis, USA. ISBN : 1-931233-86-1

- Basic Neutrosophic Algebraic Structures and their Application to Fuzzy and Neutrosophic Models (with Prof. Florentin Smarandache), pp. 149, Hexis, USA. ISBN : 1-931233-87-X
- Introduction to Bimatrices (with Prof. Florentin Smarandache and K. Ilanthenral), pp. 181, Hexis, USA. ISBN: 1-931233-95-0
- Fuzzy and Neutrosophic Analysis of Women with HIV/AIDS: With Specific Reference to Rural Tamil Nadu in India (with Prof. Florentin Smarandache), pp.316, ISBN: 1-931233-96-9
- Introduction to Linear Bialgebra (with Prof. Florentin and K. Ilanthenral), pp. 238, Hexis, USA. ISBN: 1-931233-97-7
- Application of Bimatrices to some Fuzzy and Neutrosophic Models (with Prof. Florentin Smarandache and K. Ilanthenral), pp.273, Hexis, USA. ISBN: 1-931233-98-5
- Fuzzy and Neutrosophic Analysis of Periyar's Views on Untouchability (with Prof. Florentin Smarandache and K. Kandasamy), pp. 385, Hexis, USA. ISBN: 1-931233-00-4
- N-Algebraic Structures and S-N-Algebraic Structures (with Prof. Florentin Smarandache), pp. 209, Hexis, USA. ISBN: 1-931233-05-5
- Introduction to n-adaptive models to analyze Public Opinion on AIDS (with Prof. Florentin Smarandache), pp. 235, Hexis, USA. ISBN: 1-931233-12-8
- Neutrosophic Algebraic Structures and Neutrosophic N-Algebraic Structures (with Florentin Smarandache Smarandache), pp. 219, Hexis, USA. ISBN: 1-931233-15-2
- Smarandache Neutrosophic Algebraic Structures, pp. 202, Hexis, USA. ISBN: 1-931233-16-0
- Neutrosophic Rings, (with Florentin Smarandache Smarandache) pp.154, Hexis, USA. ISBN: 1-931233-20-9
- Fuzzy Interval Matrices, Neutrosophic Interval Matrices and their Applications, (with Florentin Smarandache) pp.304, Hexis, USA. ISBN: 1-59973-003-0
- Vedic Mathematics 'Vedic' or 'Mathematics': A Fuzzy and Neutrosophic Analysis, (with Florentin Smarandache) pp. 220, Automaton, USA. ISBN: 1-59973-004-9

- Elementary Fuzzy Matrix Theory and Fuzzy Models for Social Scientists, (with Florentin Smarandache and K. Ilanthenral) pp. 352, Automaton, USA. ISBN: 1-59973-005-7
- Special Fuzzy Models for Social Scientists, (with Florentin Smarandache and K. Ilanthenral) pp. 301, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-030-8
- Super Fuzzy Matrices and Super Fuzzy Models for Social Scientists, (with Florentin Smarandache and K. Amal) pp. 280, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-027-8
- New Classes of Codes for Computer Scientists and Cryptologists, (with Florentin Smarandache) pp. 206, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-028-6
- Set Linear Algebra and Set Fuzzy Linear Algebra, (with Florentin Smarandache and K. Ilanthenral) pp. 344, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-029-4
- Super Linear Algebra, (with Florentin Smarandache) pp. 293, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-065-0
- Methods in Industrial Biotechnology for Chemical Engineers, (with Florentin Smarandache) pp. 125, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-034-0
- n-Linear Algebra of Type I and its Applications, (with Florentin Smarandache) pp. 120, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-074-X.
- Special Classes of Set Codes and their Application, (with Florentin Smarandache) pp. 168, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-079-0
- n-Linear Algebra of Type II, (with Florentin Smarandache) pp. 229, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-031-6
- Smarandache Special Definite Algebraic Structures, (with Florentin Smarandache) pp. 139, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-085-5
- Superbimatrices and their Generalizations, (with Florentin Smarandache) pp. 408, Editura CuArt, Romania. ISBN: 9-73852-088-2

- Groups as Graphs, (with Florentin Smarandache) pp. 168, Editura CuArt, Romania. ISBN: 1-59973-093-6
- Reservation for Other Backward Classes in Indian Central Government Institutions like IITs, IIMs and AIIMs-A Study of the Role of Media using Fuzzy Super FRM models, (with Florentin Smarandache and K. Kandasamy) pp. 445, Editura CuArt, Romania. ISBN: 1-59973-092-8
- Special Set Linear Algebra and Special Set Fuzzy Linear Algebra (with Florentin Smarandache and K. Ilanthenral) pp. 467, Editura CuArt, Romania. ISBN: 1-59973-106-1
- New Classes of Neutrosophic Linear Algebras (with Florentin Smarandache and K. Ilanthenral) pp. 467, Editura CuArt, Romania. ISBN: 1-59973-116-9
- Rank Distance Bicodes and their Generalization (with Florentin Smarandache, N. Suresh Babu and R.S. Selvaraj) pp. 150, Svenska fysikarkivet, Stockholm, Sweden. ISBN: 978-91-85917-12-9
- Super Special Codes using Super Matrices (with Florentin Smarandache and K. Ilanthenral) pp. 161, Svenska fysikarkivet, Stockholm, Sweden. ISBN: 978-91-85917-13-6
- Neutrosophic Bilinear Algebras and their Generalizations (with Florentin Smarandache) pp. 402, Svenska fysikarkivet, Stockholm, Sweden. ISBN: 978-91-85917-14-3
- Methods in Environmental Biotechnology for Environmentalists (with Florentin Smarandache, S. R. Kannan and S. Ramathilagam) pp. 142, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-094-4
- Interval Groupoids (with Florentin Smarandache and Moon Kumar Chetry) pp. 240, Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-125-8
- Interval Linear Algebra (with Florentin Smarandache) pp. 247, Kappa & Omega, Glendale, 2010. ISBN: 1-59973-126-1
- Interval Semigroup (with Florentin Smarandache) pp. 165, Kappa & Omega, Glendale, 2011. ISBN: 1-59973-097-9

- Algebraic structures using natural class intervals (with Florentin Smarandache) pp.170, The Educational Publisher Inc, Ohio, 2011. ISBN: 1-59973-135-3
- Interval Semirings (with Florentin Smarandache) pp. 165, Kappa & Omega, Glendale, 2011. ISBN: 1-59973-033-2
- Interval algebraic bistructures (with Florentin Smarandache) pp.208, The Educational Publisher Inc, Ohio, 2011. ISBN: 1-59973-140-7
- Algebraic bistructures using super interval matrices (with Florentin Smarandache) pp.287, The Educational Publisher Inc, Ohio, 2011. ISBN: 1-59973-153-7
- DSM Vector Spaces of Refined labels, (with Florentin Smarandache) pp. 214, Zip publishing, Ohio, 2011. ISBN: 1-59973-161-2
- Finite Neutrosophic Complex Numbers, (with Florentin Smarandache) pp. 220, Zip publishing, Ohio, 2011. ISBN: 1-59973-158-2
- Neutrosophic Interval Bialgebraic Structures, (with Florentin Smarandache) pp. 195, Zip publishing, Ohio, 2011. ISBN: 1-59973-166-7
- DSM Super Vector Spaces of Refined labels, (with Florentin Smarandache) pp. 297, Zip publishing, Ohio, 2011. ISBN: 1-59973-167-4
- Study of natural class of intervals using $(-\infty, \infty)$ and $(\infty, -\infty)$, (with Florentin Smarandache, D. Datta, HS Kushwaha and P.A. Jadhav) pp. 181, Zip publishing, Ohio, 2011. ISBN: 1-59973-168-1
- Non associative algebraic Structures using finite Complex numbers, (with Florentin Smarandache) pp. 213, Zip publishing, Ohio, 2012. ISBN: 1-59973-169-8
- Natural Product X_n on Matrices, (with Florentin Smarandache) pp. 342, Zip publishing, Ohio, 2012. ISBN: 1-59973-174-2
- Fuzzy Linguistic Topological Spaces, (with Florentin Smarandache and KAmal) pp. 193, Zip publishing, Ohio, 2012. ISBN: 1-59973-175-9

- Erasure Techniques in MRD codes, (with Florentin Smarandache, R.Sujatha and R.S.Raja Durai) pp. 162, Zip publishing, Ohio, 2012. ISBN: 1-59973-177-3
- Non Associative Linear Algebra, (with Florentin Smarandache) pp. 231, Zip publishing, Ohio, 2012. ISBN: 1-59973-176-6
- Mathematical Analysis of the Problems faced by the People With Disabilities (PWDs), (with Florentin Smarandache and A.Praveen Prakash) pp. 165, Zip publishing, Ohio, 2012. ISBN: 1-59973-178-0
- Exploring the Extension of Natural operations on Intervals, Matrices and Complex Numbers, (with Florentin Smarandache) pp. 150, Zip publishing, Ohio, 2012. ISBN: 1-59973-179-7
- Dual Numbers, (with Florentin Smarandache) pp. 159, Zip publishing, Ohio, 2012. ISBN: 1-59973-184-1
- Special Dual Numbers and Lattices, (with Florentin Smarandache) pp. 246, Zip publishing, Ohio, 2012. ISBN: 1-59973-185-8
- Semigroups as Graphs, (with Florentin Smarandache) pp. 153, Zip publishing, Ohio, 2012. ISBN: 1-59973-191-9
- Special Quasi Dual Numbers and Groupoids, (with Florentin Smarandache) pp. 193, Zip publishing, Ohio, 2012. ISBN: 1-59973-192-6
- Set Ideal Topological Spaces, (with Florentin Smarandache) pp. 114, Zip publishing, Ohio, 2012. ISBN: 1-59973-193-3
- Neutrosophic Super Matrices and Quasi Super Matrices, (with Florentin Smarandache) pp. 200, Zip publishing, Ohio, 2012. ISBN: 1-59973-194-0
- Supermodular Lattices, (with Iqbal Unnisa and Florentin Smarandache) pp. 132, Zip publishing, Ohio, 2012. ISBN: 1-59973-195-7
- Quasi Set Topological vector Subspaces, (with Florentin Smarandache) pp. 152, Zip publishing, Ohio, 2012. ISBN: 1-59973-196-4

- Innovative Uses of Matrices, (with Florentin Smarandache and Indra Venkatbabu) pp. 227, Zip publishing, Ohio, 2012. ISBN: 1-59973-208-4
- Fuzzy Analysis of School Dropouts and their Life After, (with Florentin Smarandache, K.Amal and K.Kandasamy) pp. 146, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-209-1
- Set Theoretical Approach to Algebraic Structures in Mathematics, (with Florentin Smarandache) pp. 165, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-212-1
- Fuzzy Neutrosophic Models for Social Scientists, (with Florentin Smarandache), pp. 167, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-213-8
- Algebraic Structures using Subsets, (with Florentin Smarandache) pp. 197, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-216-9
- Subset Polynomial Semirings and Subset Matrix Semirings, (with Florentin Smarandache) pp. 267, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-223-7
- Subset Groupoids, (with Florentin Smarandache) pp. 149, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-222-0
- Subset Non Associative Semirings, (with Florentin Smarandache) pp. 207, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-225-1
- Subset Interval Groupoids, (with Florentin Smarandache) pp. 246, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-226-8
- Subset Semirings, (with Florentin Smarandache) pp. 260, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-243-3
- Subset Semilinear Algebras, (with Florentin Smarandache) pp. 254, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-235-0
- Special Type of Subset Topological Spaces, (with Florentin Smarandache) pp. 254, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-243-5

- Subset Non Associative Topological Spaces, (with Florentin Smarandache) pp. 211, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-244-2
- Algebraic Structures using $[0, n)$, (with Florentin Smarandache) pp. 216, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-248-0
- Special Pseudo Linear Algebras using $[0, n)$, (with Florentin Smarandache) pp. 270, Educational Publisher Inc, Ohio, 2014. ISBN: 1-59973-248-0
- Algebraic Structures on the Fuzzy Interval $[0, 1)$, (with Florentin Smarandache) pp. 250, Educational Publisher Inc, Ohio, 2014. ISBN: 1-59973-259-6
- Algebraic Structures on Fuzzy Unit Square and Neutrosophic Unit Square, (with Florentin Smarandache) pp. 178, Educational Publisher Inc, Ohio, 2014. ISBN: 1-59973-273-2
- Groupoids of Type I and Type II using $[0, n)$, (with Florentin Smarandache) pp. 211, Educational Publisher Inc, Ohio, 2014. ISBN: 1-59973-272-5
- Algebraic Structures on Finite Complex Modulo Integers Interval $C([0, n))$, (with Florentin Smarandache) pp. 235, Educational Publisher Inc, Ohio, 2013. ISBN: 1-59973-292-3
- Algebraic Structures on Real and Neutrosophic Semi Open Squares, (With Florentin Smarandache) pp. 206, Educational Publisher Inc, Ohio, 2014, ISBN:1-59973-291-6
- New Techniques to Analyse the Predication of Fuzzy Models and Neutrosophic Models, (With Florentin Smarandache and K.Ilanthenral), pp. 242, Educational Publisher Inc, Ohio, 2014, ISBN:1-59973-297-8
- Pseudo Lattice Graphs and Their Applications to Fuzzy and Neutrosophic Models, (With Florentin Smarandache and K. Ilanthenral), pp. 276, EuropaNova, Belgium, 2014, ISBN:1-59973-296-1
- Distance in Matrices and Their Applications to Fuzzy Models and Neutrosophic Models, (With Florentin Smarandache and K. Ilanthenral), pp. 167, EuropaNova, Belgium, 2014, ISBN:1-59973-315-9

- Neutrosophic Graphs – A New Dimension to Graph Theory, (With Florentin Smarandache and K. Ilanthenral), pp. 125, EuropaNova, Belgium, 2014, ISBN:1-59973-362-3
- Euclid Squares on Infinite Planes, (With Florentin Smarandache and K. Ilanthenral), pp. 248, EuropaNova, Belgium, 2015, ISBN:1-59973-334-0
- Infinite Quaternion Pseudo Rings using $[0, n]$, (With Florentin Smarandache), pp. 231, EuropaNova, Belgium, 2015, ISBN:1-59973-316-6
- Special Type of Topological Spaces using $[0, n]$, (With Florentin Smarandache), pp. 225, EuropaNova, Belgium, 2015, ISBN:1-59973-333-3
- MOD Planes: A New Dimension to Modulo Theory, (With Florentin Smarandache), pp. 221, EuropaNova, Belgium, 2015, ISBN:1-59973-363-0
- MOD Functions: A New Approach to Function Theory, (With Florentin Smarandache), pp. 203, EuropaNova, Belgium, 2015, ISBN:1-59973-364-7
- Multidimensional MOD Planes, (With Florentin Smarandache), pp. 232, EuropaNova, Belgium, 2015, ISBN:1-59973-365-4
- Algebraic Structures on MOD Planes, (With Florentin Smarandache), pp. 213, EuropaNova, Belgium, 2015, ISBN:1-59973-367-8
- Non-Associative Algebraic Structures on MOD Planes, (With Florentin Smarandache), pp. 210, EuropaNova, Belgium, 2015, ISBN:1-59973-368-5
- Natural Neutrosophic Numbers and MOD Neutrosophic Numbers, (With Florentin Smarandache), pp. 186, EuropaNova, Belgium, 2015, ISBN:1-59973-366-1
- Mod Pseudo Linear Algebras, (With Florentin Smarandache), pp. 269, EuropaNova, Belgium, 2015, ISBN:1-59973-369-2
- Semigroups on MOD Natural Neutrosophic Elements, (With Florentin Smarandache), pp. 232, EuropaNova, Belgium, 2015, ISBN:1-59973-380-7

- Special Type of Fixed Points of MOD Matrix Operators, (With Florentin Smarandache), pp. 200, EuropaNova, Belgium, 2015, ISBN:1-59973-459-0
- Special Type of Fixed Point Pairs using MOD Rectangular Matrix Operators, (With Florentin Smarandache), pp. 256, EuropaNova, Belgium, 2015, ISBN:1-59973-460-6
- Problems on MOD Structures, (With Florentin Smarandache), pp. 145, EuropaNova, Belgium, 2015, ISBN:1-59973-379-1
- MOD Relational Maps Models and MOD Natural Neutrosophic Relational Maps Models, (With Florentin Smarandache), pp. 278, EuropaNova, Belgium, 2015, ISBN:1-59973-463-7
- MOD Cognitive Maps Models and MOD Natural Neutrosophic Cognitive Maps Models, (With Florentin Smarandache), pp. 224, EuropaNova, Belgium, 2015, ISBN:1-59973-462-0

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Lecturer

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Profile

Lecturer in Mathematics at Bidhan Chandra Institution for Girls.

Research Interests

set theory; neutrosophic set theory

List of Publications in Neutrosophics

Application of Neutrosophic Set Theory in Generalized
Assignment Problem, NSS, Vol. 9

Solution of Multi-Criteria Assignment Problem using
Neutrosophic Set Theory, NSS, Vol. 10

Dalbinder Kour

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National Institute of Technology
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Profile

Pursuing her PhD from National Institute of Technology, Durgapur, West Bengal, India. Part Time Lecturer in Michael Madhusudan Memorial College, Durgapur, West Bengal, India.

Research Interests

multi criteria decision making problems; fuzzy programming technique; transportation problems; triangular fuzzy number; intuitionistic fuzzy number; interval valued intuitionistic fuzzy number; neutrosophic set; interval valued neutrosophic set.

Neutrosophic Research

In “Application of Extended Fuzzy Programming Technique to a real life Transportation Problem in Neutrosophic environment”, the Neutrosophic Transportation Problem (NTP) is solved by two methods- FLP method and CLP method. The first method, FLP method gives the solution as crisp and then as Single Valued Neutrosophic Sets (SVNS) which represent the degree of acceptance, indeterminacy and rejection of the solution obtained from the defined membership function for a particular problem. The second method, i.e., CLP method gives the solution as crisp number only. Then the degree of the acceptance, indeterminacy and rejection is calculated. The FLP method can be seen as a better method and it gives more optimal solution. The SVNS data can represent real life uncertainties and so depicts more practical solutions of the problem as it helps to determine the degree of acceptance, indeterminacy and rejection of the obtained solution. A real life multi-objective and multi-index Neutrosophic transportation problem has also been solved other than the numerical example to illustrate the two proposed methods. The results

obtained are compared and the FLP method proves to give better solution compared to the CLP method for most of the circumstances. The solution obtained by the proposed approaches has not been compared with any of the existing approaches for NTPs, as no work has been done for neutrosophic transportation problem. It is a new type of problem. The application of the methods to a real life multi-objective and multi- index neutrosophic transportation problem is also a new field itself.

List of Publications in Neutrosophics

Dalbinder Kaur, Kajla Basu (2015). Application of Extended Fuzzy Programming Technique to a real life Transportation Problem in Neutrosophic environment, Neutrosophic Sets and Systems, Vol. 10, 2015, ISSN 2331-6055.

Dr.

Deepika Koundal

Research Scholar

Affiliation

Computer Science & Engineering
Panjab University, Chandigarh / INDIA



Profile

BTech in Computer Science & Engineering from Kurukshetra University, Kurukshetra, India. ME and PhD from University Institute of Engineering & Technology, Panjab University, Chandigarh, India. Published 12 research articles in reputed journals and conferences.

Research Interests

information retrieval; medical image processing.

Neutrosophic Research

Her doctoral research work is focused on the use of neutrosophic techniques for the development of computer-aided detection (CADx) system for the delineation of thyroid nodules in ultrasound images. This research work demonstrate the use of neutrosophic theory in medical image processing where the performance is observed to be much better. For CADx system, two Neutrosophic domain speckle reduction methods are proposed to improve clinical diagnosis and to enhance quality of ultrasound image by reduction of speckle noise. Variational methods based on Gamma and Nakagami distribution in the neutrosophic domain have been proposed for speckle reduction. Neutrosophic set takes into account the uncertainty in terms of truth-membership, indeterminacy membership and falsity-membership. Then, the filtering operation based on variational method is applied to reduce the indeterminacy of the image, which is measured by the entropy of an indeterminate set. The proposed speckle reduction method has been assessed on both the artificial speckle simulated images and real ultrasound images. Furthermore, neutrosophic based segmentation technique is proposed for automatic delineation of

nodules without any human intervention. This automated delineation method integrates spatial information with neutrosophic clustering and level-sets for accurate and effective segmentation of thyroid nodules in ultrasound images. The proposed delineation method named as Spatial Neutrosophic Distance Regularized Level Set is based on Neutrosophic L-Means clustering which incorporates spatial information for level set evolution. The SNDRLS takes rough estimation of region of interest as input provided by Spatial Neutrosophic L-Means clustering for precise delineation of one or more nodules.

List of Publications in Neutrosophics

- Deepika Koundal, Savita Gupta, Sukhwinder Singh. Automated Delineation of Thyroid Nodules in Ultrasound Images using Spatial Neutrosophic Clustering and Level Sets, *Applied Soft Computing*, vol.40, 86–97, 2016. (ELSEVIER) (SCI indexed & IF: 3.222) DOI: 10.1016/j.asoc.2015.11.035
- Deepika Koundal, Savita Gupta, Sukhwinder Singh. Speckle reduction method for thyroid ultrasound images in neutrosophic domain, *IET Image Processing*, vol.10, no.2, 167-75, 2016. (SCI indexed & IF: 0.753) DOI: 10.1049/iet-ipr.2015.0231
- Deepika Koundal, Savita Gupta, Sukhwinder Singh. Speckle Reduction filter in Neutrosophic domain, 2nd International Conference of Biomedical Engineering and Assisted Technologies (BEATS), 786-790, 2012
- Deepika Koundal, Savita Gupta, Sukhwinder Singh. Applications of Neutrosophic and Intuitionistic Fuzzy Set on Image Processing, National Conference on Green Technologies: Smart and Efficient Management (GTSEM-2012) SLIET, Longowal, 2012

Dr.

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Assistant Professor

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Profile

Assistant Professor in the School of Computer Science and Engg, VIT University, Vellore, India. Currently working on natural neutrosophic numbers and MOD structures.

Research Interests

cryptography; coding theory; information security; neutrosophic numbers; neutrosophic logic; neutrosophic mathematical modelling; neutrosophic graph theory; fuzzy and neutrosophic models for societal research.

List of Publications in Neutrosophics

Introduction to Bimatrices (with W.B.Vasantha and Florentin Smarandache), 181 p., Hexis, USA. ISBN: 1-931233-95-0

Introduction to Linear Bialgebra (with W.B.Vasantha and Florentin Smarandache), 238 p., Hexis, USA. ISBN: 1-931233-97-7

Application of Bimatrices to some Fuzzy and Neutrosophic Models (with W.B.Vasantha and Florentin Smarandache), 273 p., Hexis, USA. ISBN: 1-931233-98-5

Elementary Fuzzy Matrix Theory and Fuzzy Models for Social Scientists, (with W.B.Vasantha and Florentin Smarandache) 352 p., Automaton, USA. ISBN: 1-59973-005-7

Special Fuzzy Models for Social Scientists, (with W.B.Vasantha and Florentin Smarandache) 301 p., Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-030-8

- Set Linear Algebra and Set Fuzzy Linear Algebra, (with W.B.Vasantha and Florentin Smarandache) 344 p., Info Learn Quest, Ann Arbor, USA. ISBN: 1-59973-029-4
- Special Set Linear Algebra and Special Set Fuzzy Linear Algebra (with W.B.Vasantha and Florentin Smarandache) 467 p., Editura CuArt, Romania. ISBN: 1-59973-106-1
- New Classes of Neutrosophic Linear Algebras (with W.B.Vasantha and Florentin Smarandache) 467 p., Editura CuArt, Romania. ISBN: 1-59973-116-9
- Super Special Codes using Super Matrices (with W.B.Vasantha and Florentin Smarandache) 161 p., Svenska fysikarkivet, Stockholm, Sweden. ISBN: 978-91-85917-13-6
- New Techniques to Analyse the Predication of Fuzzy Models and Neutrosophic Models, (with W.B.Vasantha and Florentin Smarandache), 242 p., Educational Publisher Inc, Ohio, 2014, ISBN:1-59973-297-8
- Pseudo Lattice Graphs and Their Applications to Fuzzy and Neutrosophic Models, (with W.B.Vasantha and Florentin Smarandache), 276 p., EuropaNova, Belgium, 2014, ISBN:1-59973-296-1
- Distance in Matrices and Their Applications to Fuzzy Models and Neutrosophic Models, (with W.B.Vasantha and Florentin Smarandache), 167 p., EuropaNova, Belgium, 2014, ISBN:1-59973-315-9
- Neutrosophic Graphs – A New Dimension to Graph Theory, (with W.B.Vasantha and Florentin Smarandache), 125 p., EuropaNova, Belgium, 2014, ISBN:1-59973-362-3
- Euclid Squares on Infinite Planes, (with W.B.Vasantha and Florentin Smarandache), 248 p., EuropaNova, Belgium, 2015, ISBN:1-59973-334-0
- MOD Planes: A New Dimension to Modulo Theory, (with W.B.Vasantha and Florentin Smarandache), 221 p., EuropaNova, Belgium, 2015, ISBN:1-59973-363-0
- MOD Functions: A New Approach to Function Theory, (with W.B.Vasantha and Florentin Smarandache), 203 p., EuropaNova, Belgium, 2015, ISBN:1-59973-364-7

- Multidimensional MOD Planes, (with W.B.Vasantha and Florentin Smarandache), 232 p., EuropaNova, Belgium, 2015, ISBN:1-59973-365-4
- Algebraic Structures on MOD Planes, (with W.B.Vasantha and Florentin Smarandache), 213 p., EuropaNova, Belgium, 2015, ISBN:1-59973-367-8
- Non-Associative Algebraic Structures on MOD Planes, (with W.B.Vasantha and Florentin Smarandache), 210 p., EuropaNova, Belgium, 2015, ISBN:1-59973-368-5
- Natural Neutrosophic Numbers and MOD Neutrosophic Numbers, (with W.B.Vasantha and Florentin Smarandache), 186 p., EuropaNova, Belgium, 2015, ISBN:1-59973-366-1
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- Special Type of Fixed Points of MOD Matrix Operators, (with W.B.Vasantha and Florentin Smarandache), 200 p., EuropaNova, Belgium, 2015, ISBN:1-59973-459-0
- Special Type of Fixed Point Pairs using MOD Rectangular Matrix Operators, (with W.B.Vasantha and Florentin Smarandache), 256 p., EuropaNova, Belgium, 2015, ISBN:1-59973-460-6
- Problems on MOD Structures, (with W.B.Vasantha and Florentin Smarandache), 145 p., EuropaNova, Belgium, 2015, ISBN:1-59973-379-1
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- MOD Cognitive Maps Models and MOD Natural Neutrosophic Cognitive Maps Models, (with W.B.Vasantha and Florentin Smarandache), 224 p., EuropaNova, Belgium, 2015, ISBN:1-59973-462-0

Sachin Lakra

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Profile

Born in Nasik, India, in 1976. Received Master's Degree in Information Technology in 2005 and presently pursuing doctoral degree in Computer Science and Engineering from Koneru Lakshmaiah University, India. Head of the Department of IT and later CSE at MRU (formerly Manav Rachna College of Engineering - MRCE), Faridabad, India. Peer-Reviewed 6 papers of the International Congress on Computer Applications and Computational Science held in Singapore from 4 to 6 December, 2010. Published over 25 research articles and 1 textbook.

Research Interests

artificial intelligence; fuzzy theory; neutrosophy; pattern recognition; signal processing; computational intelligence; natural language processing.

List of Publications in Neutrosophics

Sachin Lakra, T.V. Prasad, G. Ramakrishna. Representation of a Sentence using a Polar Fuzzy Neutrosophic Semantic Net, International Journal of Advanced Computer Science and Applications: Special Issue on Natural Language Processing 2014, pp. 1-8

Dr.

Chunfang Liu

Lecturer

Affiliation

College of Science
Northeast Forestry University
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Profile

Bachelor degree in Applied Mathematics in Beihua University, in 1999. MSc in Applied Mathematics in Harbin Institute of Technology, China, in 2003. Currently, affiliated with College of Automation, Harbin Engineering University.

Neutrosophic Research

Studying the entropy and similarity measure of Neutrosophic Sets, the aggregation operators of Neutrosophic Sets and apply them to the decision making problems.

Research Interests

systematic engineering; decision analysis based on neutrosophic set; aggregation operators of neutrosophic set.

List of Publications in Neutrosophics

C.F. Liu, Y.S. Luo. A new method to construct entropy of interval-valued Neutrosophic Set, *Neutrosophic Sets and Systems*, vol. 11, pp. 8-11, 2016.

C.F. Liu, Y.S. Luo. The weighted distance measure based method to neutrosophic multi-attribute group decision making. *Mathematical Problems in Engineering*, vol. 2016, Article ID 3145341, 8 pages, 2016.

C.F. Liu, Y.S. Luo. Correlated aggregation operators for simplified neutrosophic set and their application in multi-

attribute group decision making, *Journal of Intelligent & Fuzzy Systems*, 2016, 30: 1755–1761.

C.F. Liu, Y.S. Luo. Power Aggregation Operators of Simplified Neutrosophic Sets and Their Use in Multi-attribute Group Decision Making. *IEEE/CAA Journal of Automatica Sinica*

Feng Liu

Researcher



Affiliation

Department of E-commerce
School of Information
Xi'an University of Finance and Economics / P.R. CHINA

Profile

Born January 1964, Xi'an, P.R.China. BSc in Computer engineering from Xidian University, China. Research student at Information Technology Development Unit in Kinston College of Further Education, Surrey, UK in Artificial Intelligence. Currently employed by the Department of E-commerce, School of Information, Xi'an University of Finance and Economics.

Several approaches with oral presentations appeared in ICII2001 Beijing (International Conference of Info-tech & Info-net), ISM2002 Beijing (International Congress of Mathematicians), and 2008 International Symposium on Information Systems & Management (ISM2008, EI cited). A number of papers are also accepted by the First International Conference on Neutrosophy, Neutrosophic Logic, Set, and Probability, USA, journal *Libertas Mathematica*, University of Texas at Arlington, USA, Octogon, journal *Brasov*, Romania, Los Alamos National Laboratory archives, USA, and books of American Research Press. For the English editorial work, he is the co-editor of *Smarandache Notions* (book series, Vol. 13), American Research Press 2002.

Neutrosophic Background

Feng Liu began his research in this area in 2002, when he contributed his first paper to the First International Conference on Neutrosophy, Neutrosophic Logic, Neutrosophic Set, Neutrosophic Probability and Statistics. Then, in cooperation with Florentin Smarandache, he made a superficial observation of the philosophic background of neutrosophy. Although there were plenty of publications at that time, including books

and many articles, actually he had little experience in Chinese philosophy before he attended Buddhism education given by the Buddhist Academy of Five Sciences. Those published earlier are more based on the following ideas: Mao Zedong's philosophy (as the compulsory education in China), with which another international article had been published prior in 1989 by Springer-Verlag London; or on Book of Changes (I-Ching), or Daodejing, with a superficial understanding. However those inspirations from Buddhism at that time are basically misleading, even though appeared in many articles and books, e.g. published by American Research Press.

When he realized his fatal flaw, he stopped neutrosophic research and shifted to extenics and knowledge management. For example, his recent paper "Toward Wisdom: A Hierarchical Wisdom Ontology based on Chinese Classics" tries to build up a transdisciplinary framework although not in the name of neutrosophy. To make clear the relation with neutrosophy he has worked out a manuscript in neutrosophy: "On Generality of Neutrosophic Logic", which provides a thorough comparative analysis from Chinese classics especially Buddhism on neutrosophic logic (which claims to have combined mathematics, philosophy with Chinese classics) and finds their intrinsic distance and disadvantage in neutrosophic philosophy. Based on the universal anitya property, the paper uncovers the cause of indeterminacy, examines implication of indeterminacy, tacit logic, contrast between logic truth and absolute truth, and fatal flaw of neutrosophic logic. Meanwhile the paper explores the prospect of its development in a SWOT frame, and has proposed a novel neutrosophic frame leading to genius and wisdom. The paper also implies the negative role of mathematical logic with respect to wisdom, and suggests the non-mathematical complement, or anti-neutrosophy – the genuine wisdom – that should be included in neutrosophy according to its own definition.

Research Interests

knowledge management; neutrosophy; extenics.

List of Publications in Neutrosophics

Neutrosophic Dialogues, American Research Press, 2002

- Paradox Review, Proceedings of the First International Conference on Neutrosophy, Neutrosophic Logic, Neutrosophic Set, Neutrosophic Probability and Statistics
- On Both A and Anti-A in Neutrosophics of Logic in Excitation-Inhibition Perspective, Presentation to the ICM2002 (International Congress of Mathematicians), Beijing
- (in Chinese) 中智学——中智逻辑, 中智集合论, 中智概率论, Xiquan Publishing House, Chinese Branch, 2003
- Logic: a Misleading Concept - A Contradiction Study toward Agent's Logic Ontology, Proceedings of the First International Conference on Neutrosophy, Neutrosophic Logic, Neutrosophic Set, Neutrosophic Probability and Statistics
- Name, Denominable and Undenominable, Proceedings of the First International Conference on Neutrosophy, Neutrosophic Logic, Neutrosophic Set, Neutrosophic Probability and Statistics
- Truth and Absolute Truth in Neutrosophic Logic, International Society of Information Fusion, 6th International Conference on Information Fusion (FUSION 2003), July 2003, Cairns, Queensland, Australia

Dr.

Peide Liu

Professor

Affiliation

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Shandong University of Finance and Economics
Erhuandong Road, Lixia District
Jinan 250014 / P.R. CHINA



Profile

Bachelor degree in Signal and Information Processing in the Southeast University in 1988. Master degree in Signal and Information Processing in the Southeast University in 1991. PhD in Management Science and Engineering from the Beijing Jiaotong University in 2010.

Currently, Prof. Dr. Peide Liu is expert of national outstanding contributions, the council member of China Information Economics Society(CIES), the managing council member and vice secretary-general of Information Management Professional Committee in CIES.

Author or co-author of more than 160 journal and conference papers, has 5 patents, and has received 6 Science and technology awards in Shandong Province.

Associate Editor of *Journal of Intelligent and Fuzzy Systems*, a member of editorial Board of *Technological and Economic Development of Economy*, *The Scientific World Journal*, *Journal of Applied Mathematics*, *Mathematical Problems in Engineering*, *African Journal of Business Management*.

Research Interests

decision analysis; decision support based on neutrosophic set; aggregation operators of neutrosophic set.

List of Publications in Neutrosophics

P.P. Chi, P.D. Liu. An Extended TOPSIS Method for the Multiple Attribute Decision Making Problems Based on Interval Neutrosophic Set, *Neutrosophic Sets and Systems*, 2013, 1(1): 63-70

- P.D. Liu, Y.C. Chu, Y.W. Li, Y.B. Chen. Some generalized neutrosophic number Hamacher aggregation operators and their application to Group Decision Making, *International Journal of Fuzzy Systems*, 2014, 16(2): 242-255
- P.D. Liu, Y.M. Wang. Multiple Attribute Decision-Making Method Based on Single Valued Neutrosophic Normalized Weighted Bonferroni Mean, *Neural Computing and Applications*, 2014, 25 (7-8): 2001-2010
- P.D. Liu, L.L. Shi. The Generalized Hybrid Weighted Average Operator Based on Interval Neutrosophic Hesitant Set and Its Application to Multiple Attribute Decision Making, *Neural Computing and Applications*, 2015, 26(2): 457-471
- P.D. Liu, G.L. Tang. Some power generalized aggregation operators based on the interval neutrosophic numbers and their application to decision making, *Journal of Intelligent & Fuzzy Systems* 30 (2016), 2517–2528
- Y.H. Li, P.D. Liu, Y.B. Chen. Some Single Valued Neutrosophic Number Heronian Mean Operators and Their Application in Multiple Attribute Group Decision Making, *Informatica*, 2016, 27(1), 85–110
- M.C. Zhang, P.D. Liu, L.L. Shi. An Extended Multiple Attribute Group Decision-making TODIM Method Based on the Neutrosophic Numbers, *Journal of Intelligent & Fuzzy Systems*, 30(3)(2016) 1773-1781
- P.D. Liu, Y.M. Wang. Interval neutrosophic prioritized OWA operator and its application to multiple attribute decision making, *Journal of Systems Science & Complexity*, In press. DOI: 10.1007/s11424-015-4010-7
- P.D. Liu, H.G. Li. Multiple attribute decision making method based on some normal neutrosophic Bonferroni mean operators, *Neural Computing and Applications*, DOI: 10.1007/s00521-015-2048-z, In press.
- P.D. Liu, F. Teng. Multiple attribute decision making method based on normal neutrosophic generalized weighted power averaging operator, *International Journal of Machine Learning And Cybernetics*, DOI: 10.1007/s13042-015-0385-y, In press.

- R. Şahin, P.D. Liu. Maximizing deviation method for neutrosophic multiple attribute decision making with incomplete weight information, *Neural Comput & Applic*, DOI 10.1007/s00521-015-1995-8, In press.
- P.D. Liu, L.L. Shi. Some Neutrosophic Uncertain Linguistic Number Heronian Mean Operators and Their Application to Multi-attribute Group Decision making, *Neural Comput & Applic*, DOI 10.1007/s00521-015-2122-6, In press.
- E.Z Zheng, F.Teng, P.D. Liu. Multiple attribute group decision making method based on neutrosophic number generalized hybrid weighted averaging operator, *Neural Comput & Applic*, DOI 10.1007/s00521-016-2180-4, In press.
- P.D. Liu, X. Liu. The neutrosophic number generalized weighted power averaging operator and its application in multiple attribute group decision making, *International Journal Of Machine Learning And Cybernetics*, DOI: 10.1007/s13042-016-0508-0, In press.

Dr.

Francisco Gallego Lupiáñez

Associate Professor

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Faculty of Mathematics
University Complutense of Madrid
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Profile

Born in 1958, in Madrid, Spain. Received the MS and PhD degrees of the University Complutense, of Madrid, in 1980 and 1985, respectively.

Since 1981, he has been with the Department of Geometry and Topology, University Complutense, where he is currently an Associate Professor.

Dr. F.G. Lupiáñez is author of more than forty scientific papers on topology and fuzzy mathematics, and is member of the editorial board of nine journals.

Member of the Editorial board of: "The Open Cybernetics and Systemics Journal" (Bentham Science Publ., USA), "The Journal of Mathematics and Computer Science" (Nonlinear Analysis Group, Poland), "Advances in Fuzzy Sets and Systems" (Pushpa Publ., India), "Journal of Mathematical and Computational Science", "Applied Mathematics" (Scientific & Academic Publ., USA), "International Journal of Applied Mathematical Research", "American Journal of Applied Mathematics and Statistics" (Science & Education Publ., USA), "Journal of Computer Engineering and Science" (Cambridge Publ., USA), "Mathematics and Statistics" (Horizon Research Publ., USA), "Current Advances in Mathematics" (Edinwilson Press), "Neutrosophic Sets and Systems", and "International Journal of Current Research in Computer Science and Technology".

Research Interests

general topology; fuzzy topology.

List of Publications in Neutrosophics

- F.G. Lupiáñez. Alpha-paracompacidad, productos topológicos y paracompacidad total (Ph. D. Thesis), Univ. Complutense de Madrid, Madrid 1985 (in Spanish).
- F.G. Lupiáñez. Alpha-paracompact subsets and well-situated subsets, *Quest. & Ans. Gen. Topology* 5 (1987), 293-302.
- F.G. Lupiáñez. Total paracompactness and Banach spaces, *Proc. Amer. Math. Soc.* 103 (1988), 210-214.
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- F.G. Lupiáñez, E. Outerelo. Paracompactness and closed subsets, *Tsukuba J. Math.* 13 (1989), 483-493.
- F.G. Lupiáñez. On some ultraparacompact spaces, *Acta Math. Hung.* 56 (1990), 23-28.
- F.G. Lupiáñez. On continued fractions and the Sorgenfrey line, *Quest. & Ans. Gen. Topology* 8 (1990), 457-465.
- F.G. Lupiáñez. Concerning ultraparacompact spaces, *Quest. & Ans. Gen. Topology* 11 (1993), 145-152.
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- F.G. Lupiáñez. Non-archimedean fuzzy topological spaces, *J. Fuzzy Math.* 4 (1996), 559-565.
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- F.G. Lupiáñez. Invariance of fuzzy properties, *Mat. Vesnik* 50 (1998), 11-16.
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- F.G. Lupiáñez. Separation in intuitionistic fuzzy topological spaces, *Internat. J. Pure Appl. Math.* 17 (2004), 29-34.
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- F.G. Lupiáñez. Covering properties in intuitionistic fuzzy topological spaces, *Kybernetes* 36 (2007), 749-753.
- F.G. Lupiáñez. On Neutrosophic Topology, *Kybernetes* 37 (2008), 797-800.
- F.G. Lupiáñez. On M-spaces and Banach spaces, *Internat. Math. Forum* 3 (2008), 759-762.
- F.G. Lupiáñez. Some recent results on Atanassov's intuitionistic fuzzy topological spaces, in *Computational Intelligence in Decision and Control*, World Scientific (Singapore, 2008), 229-234.
- F.G. Lupiáñez. Interval neutrosophic sets and Topology, in *Applied and Computational Mathematics*, WSEAS (Athens, 2008), 110-112.
- F.G. Lupiáñez. On various neutrosophic topologies, in "Recent advances in Fuzzy Systems, WSEAS (Athens, 2009), 59-62.
- F.G. Lupiáñez. Interval neutrosophic sets and Topology, *Kybernetes* 38 (2009), 621-624.
- F.G. Lupiáñez. On various neutrosophic topologies, *Kybernetes* 38 (2009), 1009-1013.
- F.G. Lupiáñez. On neutrosophic paraconsistent topology, *Kybernetes* 39 (2010), 598-601.
- F.G. Lupiáñez. On Lowen's fuzzy compact spaces, in *Mathematical Models for Engineering Science*, WSEAS (Athens, 2010), 35-36.
- F.G. Lupiáñez. On Lowen's fuzzy compact spaces, *Kybernetes* 41 (2012), 189-191.
- F.G. Lupiáñez. Utilización de material divulgativo para la enseñanza de la Topología, in "Contribuciones matemáticas hom. J.Tarrés, Univ. Complutense (Madrid, 2012), 243-254. (in Spanish)
- F.G. Lupiáñez. On some paracompactness-type properties of fuzzy topological spaces, in "Mathematical Methods in Science and Mechanics, WSEAS (Athens, 2014), 238-241.

- F.G. Lupiáñez. Filters on Michálek's fuzzy topological spaces, in "Recent Advances in Computational Mathematics WSEAS Press (Athens, 2014), pp. 41-43.
- F.G. Lupianez. Utilizacion de material divulgativo para la enseñanza de la Geometria Proyectiva, in "Experiencias y espacios de aprendizaje, Univ. Complutense, and Univ. Politecnica de Madrid (Madrid, 2014), pp. 227-243.

Dr.

Pinaki Majumdar

Assistant professor

Affiliation

Department of Mathematics
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Profile

Assistant professor and head of the Department of Mathematics of M.U.C Women's College under University of Burdwan in India. Also a guest faculty in the Integrated Science Education and Research Centre of Visva-Bharati University, India. PhD in Mathematics. Published many research papers in reputed international journals and contributed a few chapters in research monographs. Acted as a reviewer of more than a dozen of reputed international journals. Completed a few research projects sponsored by University Grants Commission of India.

Research Interests

neutrosophic set theory and its applications; soft set theory and its application; fuzzy set theory; fuzzy and soft topology; fuzzy functional analysis.

List of Publications in Neutrosophics

- P. Majumdar (with R. Chatterjee, S. K. Samanta). On some similarity measures and entropy on quadripartitioned single valued neutrosophic sets, *Journal of Intelligent and Fuzzy Systems*(IOS press), 30(4), 2475-2485 (2016)(DOI: 10.3233/IFS-152017).
- P. Majumdar (with R. Chatterjee, S. K. Samanta). Single valued neutrosophic multisets, *Annals of Fuzzy Mathematics and Informatics* (Korea), 10(3),499-514 (2015).

- P. Majumdar (with S.K. Samanta). On similarity and entropy of Neutrosophic sets, *Journal of Intelligent and Fuzzy Systems* (IOS press), 26 (2013) 1245-1252
- P. Majumdar. Neutrosophic Sets and its applications to decision making, in *Computational Intelligence for Big Data Analysis: Frontier Advances & Applications*, Springer-Verlag/Heidelberg (Studies in Adaptation, learning, and Optimization Series), Editors- D.P. Acharjee, Satchidananda Dehuri, Dr. Sugata Sanyal. (ISBN 978-3-319-16597-4, ISBN 978-3-319-16598-1(eBook), (2015)

Mohamed Abed-ElBaset Metwally

Associate Professor

Affiliation

Department of Operations Research and Decision Support
Faculty of Computers and Informatics
Zagazig University / EGYPT



Profile

PhD in Operations Research & Decision Support Systems. Master degree in the same area. BSc of Information Systems and Technology. BSc of Operations Research & Decision Support (all from Faculty of Computers and Informatics, University Zagazig, Egypt).

Editor or reviewer to a number of journals, e.g.: *International Journal of Modern Education and Computer Science (IJMECS)*, *International Journal of Soft Computing and Engineering (IJSCE)*: www.ijscce.org, *International Journal of Engineering and Advanced Technology (IJEAT)*: www.ijeat.org, *International Journal of Recent Technology and Engineering (IJRTE)*: www.ijrte.org; *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*: www.ijitee.org, *International Journal of Innovative Science and Modern Engineering (IJISME)*: www.ijisme.org, *International Journal of Management and Humanities (IJMH)*: www.ijmh.org, *International Journal of Advanced Engineering and Nano Technology (IJAENT)*: www.ijaent.org, *International Journal of Inventive Engineering and Sciences (IJIES)*: www.ijies.org, *International Journal of Emerging Science and Engineering (IJESE)*: www.ijese.org, and so on.

Research Interests

neutrosophic computer science \ optimization; system analysis and design information system and technology; probability statistics; artificial intelligent techniques operation research/ management; applied mathematics decision support systems.

Kalyan Mondal

Assistant Teacher

PhD candidate

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Birnagar High School (HS)

Birnagar, Ranaghat

Nadia, 741127, West Bengal / INDIA



Profile

Born in 1980. Assistant teacher of Mathematics. Currently pursuing PhD from Department of Mathematics, Jadavpur University, Kolkata, India, in neutrosophic decision making problems.

Neutrosophic Research

Mondal and Pramanik defined tri-complex rough neutrosophic similarity measure. The same authors studied interval neutrosophic multi attribute decision making and defined accumulated arithmetic operator and interval grey relational coefficient. They also defined neutrosophic tangent similarity measure and applied the concept in medical diagnosis and multi attribute decision making (MADM) problems. The same authors defined rough bipolar neutrosophic sets, rough accuracy score function and applied it for MADM; rough neutrosophic cosine, Jaccard and Dice similarity measure; rough accumulated geometric operator; cotangent neutrosophic refined similarity measure; rough neutrosophic cotangent similarity measure.

Research Interests

neutrosophic logic; rough neutrosophic logic; bipolar neutrosophic sets; decision making in neutrosophic hybrid environment; neutrosophic soft computing based techniques.

Research Topic

Decision making based on neutrosophic strategy.

List of Publications in Neutrosophics

Papers

- K. Mondal & S. Pramanik. 2015. Tri-complex Rough Neutrosophic Similarity Measure and its Application in Multi-Attribute Decision Making. *Neutrosophic Critical Review*. Volume XI, 2015, 26-40.
- K. Mondal & S. Pramanik. 2015. Decision Making Based on Some similarity Measures under Interval Rough Neutrosophic Environment. *Neutrosophic Sets and Systems (NSS)*, 10, 47-58. ISSN 2331-6055 (print), ISSN 2331-608X (online).
- K. Mondal & S. Pramanik. 2015. Neutrosophic Refined Similarity Measure Based on Tangent Function and its Application to Multi Attribute Decision Making. *Journal of New Theory*, 8, 41-50. ISSN: 2149-1402.
- S. Pramanik, & K. Mondal. 2015. Interval Neutrosophic Multi-Attribute Decision-Making Based on Grey Relational Analysis. *Neutrosophic Sets and Systems (NSS)*, 9, 14-23. ISSN 2331-6055 (print), ISSN 2331-608X (online).
- K. Mondal & S. Pramanik. 2015. Neutrosophic Decision Making Model for Clay-Brick Selection in Construction Field Based on Grey Relational Analysis. *Neutrosophic Sets and Systems (NSS)*, 9, 72-79. ISSN 2331-6055 (print), ISSN 2331-608X (online).
- K. Mondal & S. Pramanik. 2015. Neutrosophic Tangent Similarity Measure and its application to multiple attribute decision making. *Neutrosophic Sets and Systems (NSS)*, 9, 92-98. ISSN 2331-6055 (print), ISSN 2331-608X (online).
- S. Pramanik, & K. Mondal. 2015. Some rough neutrosophic similarity measure and their application to multi attribute decision making. *Global Journal of Engineering Science and Research Management*, 2(7), 61-74. ISSN 2349-4506, Impact Factor: 2.265.
- S. Pramanik, & K. Mondal. 2015. Cotangent Similarity Measure of Rough Neutrosophic Sets and its Application to Medical Diagnosis. *Journal of New Theory*, 4, 90-102. ISSN: 2149-1402.

- K. Mondal & S. Pramanik. 2015. Rough Neutrosophic Multi-Attribute Decision-Making Based on Rough Accuracy Score Function. *Neutrosophic Sets and Systems (NSS)*, 8, 16-22. ISSN 2331-6055 (print), ISSN 2331-608X (online).
- K. Mondal & S. Pramanik. 2015. Neutrosophic refined similarity measure based on cotangent function and its application to multi attribute decision making. *Global Journal of Advanced Research*, Volume 2, issue 2, 486-496. (ISSN: 2394-5788).
- S. Pramanik, & K. Mondal. 2015. Cosine Similarity Measure of Rough Neutrosophic Sets and Its Application in Medical Diagnosis. *Global Journal of Advanced Research*, Volume 2, issue 1, 212-220..(ISSN: 2394-5788).
- K. Mondal & S. Pramanik. 2015. Neutrosophic Decision Making Model of School Choice. *Neutrosophic Sets and Systems (NSS)*, Volume 7, 62-68..(ISSN: 2331-6055 (print), ISSN: 2331-608X (online)). .
- K. Mondal & S. Pramanik .2015. Rough Neutrosophic Multi-Attribute Decision-Making Based on Grey Relational Analysis. *Neutrosophic Sets and Systems (NSS)*. Volume 7, 8-17, (ISSN 2331-6055 (print), ISSN 2331-608X (online)).
- K. Mondal & S. Pramanik. 2014. Multi-criteria Group Decision Making Approach for Teacher Recruitment in Higher Education under Simplified Neutrosophic Environment. *Neutrosophic Sets and Systems (NSS)*, Volume 6, 28-34. (ISSN 2331-6055 (print), ISSN 2331-608X (online)).
- K. Mondal & S. Pramanik. 2014. A Study on Problems of Hijras in West Bengal Based on Neutrosophic Cognitive Maps. *Neutrosophic Sets and Systems (NSS)*, Volume 5, 21-26, (ISSN 2331-6055 (print), ISSN 2331-608X (online)).
- Surapati Pramanik and Kalyan Mondal. Rough bipolar neutrosophic set. *Global Journal of Engineering Science and Research Management*, 3(6), 71-81, 2016. ISSN 2349-4506 Impact Factor: 2.545.
- Kalyan Mondal and Surapati Pramanik. Several trigonometric Hamming similarity measures of rough neutrosophic sets and their applications in decision making. "New Trends in

Neutrosophic Theories and Applications (book)", 2016 (In press).

Kalyan Mondal, Surapati Pramanik and Bibhas C Giri. Role of neutrosophic logic in data mining. "New Trends in Neutrosophic Theories and Applications (book)", 2016 (In press).

Kalyan Mondal, Surapati Pramanik and Florentin Smarandache. Multi-attribute Decision Making based on Rough Neutrosophic Variation Coefficient Similarity Measure, Neutrosophic Sets and Systems, vol 13, 2016 (In press). (ISSN 2331-6055 (print), ISSN 2331-608X (online)).

Kalyan Mondal, Surapati Pramanik and Florentin Smarandache. Rough neutrosophic TOPSIS for multi-attribute group decision making, Neutrosophic Sets and Systems, vol 13, 2016 (In press). (ISSN 2331-6055 (print), ISSN 2331-608X (online)).

Kalyan Mondal, Surapati Pramanik and Florentin Smarandache. Rough Neutrosophic Hyper-complex Set and Its Application to Multi-attribute Decision Making. Critical Review XIII. (In press).

International Conference (Presented Paper):

Kalyan Mondal, and S. Pramanik. Several trigonometric Hamming Similarity Measures of Rough Neutrosophic Sets and their Applications in Decision Making. Presented at International seminar on "ICNDAO 2015, Department of Mathematics Jadavpur University, 9-11 December (Presented by Kalyan Mondal).

State Level Seminar (Presented Paper):

Kalyan Mondal, Surapati Pramanik, Neutrosophic Decision Making Model for Clay-Brick Selection in Construction Field Based on Grey Relational Analysis. Presented at 22st West Bengal State Science & Technology Congress held on 28 February-01 march, 2015, University of North Bengal, Darjeeling. (Presented by Kalyan Mondal).

Prof. Dr.

Anjan Mukherjee

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Department of Mathematics
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Tripura / INDIA



Profile

Born 01/01/1955. BSc and MSc in Mathematics from University of Calcutta. PhD from Tripura University. Present Designation/position: Professor, Pro Vice Chancellor. Topics Taught : Real Analysis, Abstract Algebra, Fuzzy Set Theory, Fuzzy Topology. 12 candidates were awarded under his guidance. 8 scholars are still working under him.

Almost 30 years of research and teaching experience. Published more than 150 research papers in journals and conference proceedings and has delivered several invited talks. He is also associated with Fuzzy and Rough Sets Association. He had visited University of Texas (U.S.A.), City College of New York (U.S.A.), Malaysia (AMC 5th Asian Mathematical Conference) and Bangladesh, Turkey, University of Macau.

Published books or chapters in books: *Fuzzy Set and Fuzzy Topology* (with Dr. S. Bhattacharya (Halder)); *Generalized Rough Sets: Hybrid Structure and Applications* (Springer) ISBN-10: 8132224574, ISBN-13: 978-8132224570; *Handbook of Research on Generalized and Hybrid Set Structures and Applications for Soft Computing: a volume in the Advances in Computational Intelligence and Robotics (ACIR) Book Series*, IGI Global (USA); *Relations On Intuitionistic Fuzzy Soft Multi sets*, Information Science and Applications, Lecture notes on Electrical Engg. 339, DOI 10-1007/978-3-662-46578-3-71, Springer-Verleg Berline Heidelberg (2015), 607-614 (with Ajoy Kanti Das).

Research Interests

topology; fuzzy set theory; fuzzy topology; rough sets; soft set; neutrosophic soft sets.

List of Publications in Neutrosophics

Several Similarity measures of interval valued Neutrosophic soft sets and their applications in Pattern Recognition Problems. *Neutrosophic Sets and Systems* 6 (2014), 54-60. (with Sadhan Sarkar)

Interval Valued Neutrosophic Soft Topological spaces, *Neutrosophic Sets and Systems* 6 (2014), 17-26 (with Mithun Datta and Florentin Smarandache, Department of Mathematics, University of New Mexico, USA).

Similarity measures of interval valued intuitionistic fuzzy soft sets and their applications in Medical diagnosis problems, *New Trends in Mathematical Sciences*, 2(3) (2014), 159-165. (with Sadhan Sarkar)

A new method of measuring similarity between two neutrosophic soft sets and its applications in pattern recognition problems, *Neutrosophic Sets and Systems*, 8(2015), 70-76. (with Sadhan Sarkar)

Interval Valued Neutrosophic Soft Sets, *The Journal Of Fuzzy Mathematics* (Los Angeles), 23(2) (2015), 283-294. (with Mithun Datta)

Interval Valued Neutrosophic Soft Set Relations, *The Journal Of Fuzzy Mathematics* (Los Angeles), 23(2) (2015), 309-324. (with Mithun Datta)

Prof. Dr.

Madhumangal Pal

Affiliation

Department of Applied Mathematics
Vidyasagar University
Midnapore-721102, West Bengal / INDIA



Profile

Professor of Applied Mathematics, Vidyasagar University, India. Received Gold and Silver medals from Vidyasagar University for rank first and second in MSc and BSc examinations respectively. Received jointly with Prof. G.P.Bhattacharjee, "Computer Division Medal" from Institute of Engineers (India) in 1996 for best research work. In 2013, received Bharat Jyoti Award for the significant contribution in academics.

Successfully guided 26 research scholars for PhD degrees. Published more than 210 articles in international and national journals. Author of eight books published in India and United Kingdom.

Editor-in-Chief of "Journal of Physical Sciences" and "Annals of Pure and Applied Mathematics", and member of the editorial Boards of many journals.

Also, visited China, London, Malaysia, Thailand, Hong Kong, Dubai and Bangladesh to deliver invited talks and chaired in national and international seminars/ conferences/ winter school/ refresher course.

Member of several administrative and academic bodies in Vidyasagar University and other institutes. Member of the Calcutta Mathematical Society, Advanced Discrete Mathematics and Application, etc.

Neutrosophic Research

Prof. Pal with his student have defined intuitionistic neutrosophic set, four types of intuitionistic neutrosophic relations, some new operations, viz. complement, union, intersection, etc. Also, they have shown that all intuitionistic neutrosophic sets are neutrosophic set but all neutrosophic sets are not intuitionistic neutrosophic sets. Presently, they are working on intuitionistic fuzzy neutrosophic matrices.

Research Interests

algorithmic and fuzzy graph theory; fuzzy matrices; neutrosophic sets; genetic algorithms; parallel algorithms.

List of Publications in Neutrosophics

M. Bhowmik, M. Pal. Intuitionistic Neutrosophic Set, *Journal of Information and Computing Science*, 4(2) (2009) 142-152.

M. Bhowmik, M. Pal. Intuitionistic Neutrosophic Set Relations and Some of its Properties, *Journal of Information and Computing Science*, 5(3) (2010) 183-192.

Santanu Kumar Patro

Student

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Department of Mathematics
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Profile

1st class Hons. with Distinction in Bachelor degree from Khallikote Auto. College, Berhampur, India. Student at MSc in Mathematics, Berhampur University, India.

Neutrosophic Research

At only 17 years of age, the theoretical beauty of Neutrosophy attracts Santanu Kumar Patro, while he was just browsing the web. After that, he had committed to do research in Neutrosophics. The time passes... & he became the youngest neutrosophic researcher by publishing his 1st research paper on July 2016, in *Neutrosophic sets & system* (vol. 12).

List of Publications in Neutrosophics

- S.K. Patro, F. Smarandache. The neutrosophic statistical distribution: more problems, more solutions. NSS, 12, July issue, ISSN 2321- 6055, 2016.
- Santanu Ku. Patro, F. Smarandache. On the practical visualization of Neutrosophic over-/ under-/ off membership. [To be published in NSS, 13].
- Santanu Ku. Patro. Neutrosophy & Love: A dynamic relation. [Not published].
- Santanu Ku. Patro, F. Smarandache. My vision towards Neutrosophy & its research (A short review). [Book in progress].
- Santanu Kumar Patro, F. Smarandache. Neutrosophic Linear Algebra. [Book in progress].

Conference paper

Santanu Kumar Patro. On the construction of a refined mathematical theory of cryptography & Information: A Neutrosophic estimation. Accepted for ICAMTPBCS International Conference, Calcutta, India.

Dr.

Vasile Pătrașcu

IT Analyst

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Tarom Information Technology
Bucharest / ROMANIA



Profile

Graduated Electronics and Telecommunications at “Universitatea Politehnică din București” (1980), and Mathematics and at “Universitatea din București” (1988). (1988). PhD in Electronics from “Universitatea Politehnică din București”, Romania (2001). Designer Engineer at F.E.A. Bucharest (1980-1993). Senior Programmer at Computer Consulting S.R.L. (1993-1994). IT Analyst, Department of Informatics Technology, Romanian Air Transport, since 1995.

Research Interests

image processing; algorithms; feature extraction; applied mathematics; clustering algorithms; intuitionistic fuzzy set theory; colour representation and analysis; uncertainty quantification; neutrosophic representation of information.

List of Publications in Neutrosophics

Vasile Patrascu. Refined Neutrosophic Information Based on Truth, Falsity, Ignorance, Contradiction and Hesitation, Neutrosophic Sets and Systems, Vol. 11, pp. 57-66, 2016.

Vasile Patrascu. Penta and Hexa Valued Representation of Neutrosophic Information, Technical report, TI.1.3.2016, march 2016.

Vasile Patrascu. The Neutrosophic Entropy and its Five Components , Neutrosophic Sets and Systems, Vol. 7, pp. 40-46, 2015.

Vasile Patrascu. A Novel Penta-Valued Descriptor for Color Clustering, The 6th International Conference on Image and

- Signal Processing, ICISP 2014, Cherbourg, Normandy, France, June 30 – July 2, 2014, Volume: Image and Signal Processing, Lecture Notes in Computer Science, Volume 8509, pp 173-182, 2014
- Vasile Patrascu. Multi-Valued Representation of Neutrosophic Information, 15th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2014, Montpellier, France, July 15-19, 2014, Volume: Part I, CCIS 442, pp 304-313, 2014.
- Vasile Patrascu. Multi-Valued Fuzzy Spaces for Color Representation, 15th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2014, Montpellier, France, July 15-19, 2014, Volume: Part II, CCIS 443, pp 174-183, 2014.
- Vasile Patrascu. Neutrosophic information in the framework of multivalued representation, The 21th Conference on Applied and Industrial Mathematics, CAIM 2013, Bucharest, Romania, September 19-22, 2013.
- Vasile Patrascu. Bi-fuzziness, Incompleteness, Inconsistency, Truth and Falsity Based on Saturation and Ignorance Functions. A New Approach of Penta-Valued Knowledge Representation, MAICS 2012, Midwest Artificial Intelligence and Cognitive Science Conference 2012, Cincinnati, USA, Volume: Proceedings of the 23rd Midwest Artificial Intelligence and Cognitive Science Conference 2012, Vol 841, pp. 112-118, Apr 21-22, 2012.
- Vasile Patrascu. A New Penta-valued Logic Based Knowledge Representation, 12th International Conference, Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2008, Malaga, Spain, Volume: pp. 17-22, June 22-27, 2008.
- Vasile Patrascu. Penta-Valued Fuzzy Set, IEEE International Conference on Fuzzy Systems, FUZZ-IEEE 2007, Imperial College, London, UK, pp. 1-4, 23-26 July, 2007.

Vasile Patrascu. Fuzzy Set Based on Four-Valued Logic, The International Conference on Computers, Communications & Control, ICC 2006, pp.360-365,1-3 June 2006.

Mihaela-Gabriela Păun

PhD Candidate



List of Publications in Neutrosophics

Incidence of the Neutrosophy and Popular Elements in the Sculptural Works of Romanian Constantin Brâncuși, in Communication Neutrosophic Routes, Smarandache, Florentin & Vlăduțescu Ștefan (Coord) (2014). Education Publishing. Columbus, Ohio, USA. ISBN: 978-1-59973-283-1.

Neutrosophic Perspectives Regarding the Transformation of Feeling in Conscience (Camil Petrescu), in Uncertainty Communication Solution in Neutrosophic Key, Florentin Smarandache, Bianca Teodorescu, Mirela Teodorescu (2015). EuropaNova asbl, Belgium. ISBN: 978-1-59973-371-5.

Neutral nucleus of the poetry of Ioan Alexandru, in Neutrosophy, paradoxism and communication, Ștefan Vlăduțescu, Dan Valeriu Voinea, Elena Rodica Opran (2014). Editura Sitech, Craiova. ISBN: 978-606-11-4346-7.

Neutrosophy and anti-neutrosophy in Camil Petrescu's work: under the sign of the idea and love, in Neutrosophy, paradoxism and communication, Ștefan Vlăduțescu, Dan Valeriu Voinea, Elena Rodica Opran (2014). Editura Sitech, Craiova. ISBN: 978-606-11-4346-7.

Hermeneutics can make beauty and ugly as neutral (as neutrosophic), Mihaela-Gabriela Păun & Mirela Teodorescu, in Social Sciences and Education Research Review, 2 52-61 (2014), ISSN 2392-9683. www.sserr.ro.

Surapati Pramanik

FIBRF, Ph. D., M. Sc, M.Ed.

Affiliation

Department of Mathematics
Nandalal Ghosh B.T. College, Panpur P.O.-Narayanpur, Dist.
North 24 Parganas, W.B., 743126 / INDIA



Profile

Surapati Pramanik comes of a most ordinary peasant family but strong ancestral root at Dubapara, P.O.-Kazipara, Dist-Murshidabad, West Bengal, India-743126, in the district of Murshidabad situated on the bank of the river Padma in December 29, 1971. His father late Subhas Chandra Pramanik was a man of iron determination with ever smiling diligent personality. Mother Souvagya Devi is a pious lady. His parents' simple but disciplined life style influenced Surapati from his very childhood. His father was the chief of the village and so his strong personality paves Surapati to reach a certain goal in his life. His elder brother Sukumar Pramanik played an important role in learning mathematics during his school life. Elder sister Sabita, younger brother Sukhen and sister Sumitra, cousin sister Bithika and village playmates have really made Surapati a boy of pleasant manner. The natural phenomena and wonderful beauty of the river Padma and her surroundings have supplied oxygen to be brought up nicely to this boy Surapati. His wife Manjira and daughter Nahali are the special inspiration of Surapati. He had his primary education from Dubapara Prathamik Vidyalaya (Dubapara Primary School). He has enjoyed school life because of its location in lap of nature. He completed his secondary education from Kazipara Haridas Vidyabhan, Kazipara ,Murshidabad, where he received love and affection from his teachers and class-mates. Sri Sunil Karmakar, his family tutor influenced Surapati especially in learning English. He completed his higher secondary education from Krishnath College, Berhampore, a college of historical importance and it is also situated on the bank of river Bhagirathi (Ganga) at Berhampore, Murshidabad, W.B. He got opportunity to have company of a famous mathematics teacher, Nimai

Bolar who grew special attraction in him for mathematics. He got several scholarships during his study life. He passed B.Sc. and M. Sc. in Mathematics from University of Kalyani, Kalyani. He received Ph. D. from Indian Institute of Engineering Science and Technology (IEST), Shibpur formerly known as Bengal Engineering and Science University.

Neutrosophic Research

S. Pramanik delivered a lecture on application of neutrosophic game theory to Jammu Kashmir conflict between India and Pakistan in West Bengal State Science and Technology Congress, 2008. He presented critical review of Vivekanada's educational thoughts for women education based on neutrosophic logic in 2012. In 2013, Pramanik and Chackrabarti presented the problem of construction workers in West Bengal based on-neutrosophic cognitive map. The journal "Neutrosophic Sets and System" appears from 2013. Following that S. Pramanik regularly writes research articles for "Neutrosophic Sets and Systems". Meanwhile he comes in close contact with Florentin Smarandache, the polymath and father of neutrosophy. Inspired by Florentin Smarandache, S. Pramanik proposed neutrosophic linear goal programming in 2016. In 2016 he also proposed neutrosophic linear multi-objective programming. In 2016 Pramanik and Mondal defined rough bipolar neutrosophic set and proved some of its properties. Pramanik and Mondal presented tri-complex rough neutrosophic similarity measure and its application in multi-attribute decision making. In 2016, together with Pranab Biswas and Bibhas C. Giri, Surapati Pramanik presented value and ambiguity index based ranking method of single-valued trapezoidal neutrosophic numbers. In 2015, Pramanik, Biswas and Giri presented hybrid vector similarity measures and weighted hybrid vector similarity measures for both single valued and interval valued neutrosophic sets and proved some of their basic properties. In 2015, together with Pranab Biswas and Bibhas C. Giri, Pramanik presented TOPSIS in neutrosophic environment. Pramanik and Mondal did some important works on rough neutrosophic sets. In collaboration with Florentin Smarandache and Kalyan Mondal, he proposed rough hyper-complex set and its application in multi-attribute decision making. He received several awards such as Golokpati Roy Memorial Award in 1988, Fellow of International Benevolent Research Foundation in 2015 and "Bharat Siksha Ratan Award 2016". He is the

Editorial Board Member of “Neutrosophic Sets and Systems”. He has formed a research group for neutrosophics with his scholars and collaborators. He devotes his life for developing neutrosophic logic and neutrosophy and its various fields.

Research Interests

neutrosophic optimization; neutrosophic game theory; decision making in neutrosophic environment and neutrosophic hybrid environment; neutrosophic medical diagnosis; neutrosophy.

List of Publications in Neutrosophics

- Surapati Pramanik. (2016). Neutrosophic multi-objective linear programming. *Global Journal of Engineering Science and Research Management* 3(8), 36-46.
- Surapati Pramanik. (2016). Neutrosophic linear goal programming. *Global Journal of Engineering Science and Research Management* 3(7), 01-11.
- Surapati Pramanik, Kalyan Mondal. (2016). rough bipolar neutrosophic set. *Global Journal of Engineering Science and Research Management* 3(6), 71-81.
- Surapati Pramanik, Shyamal Dalapati. (2016). GRA based multi criteria decision making in generalized neutrosophic soft set environment. *Global Journal of Engineering Science and Research Management* 3(5), 153-169.
- Surapati Pramanik, Durga Banerjee, Bibhas C. Giri. (2016). Multi – criteria group decision making model in neutrosophic refined set and its application. *Global Journal of Engineering Science and Research Management* 3(6), 12-18.
- Pranab Biswas, Surapati Pramanik, Bibhas C. Giri. (2016). Aggregation of triangular fuzzy neutrosophic set information and its application to multi-attribute decision making. *Neutrosophic Sets and Systems* 12, 20-40.
- Pranab Biswas, Surapati Pramanik, Bibhas C. Giri. (2016). Value and ambiguity index based ranking method of single-valued trapezoidal neutrosophic numbers and its

- application to multi-attribute decision making. *Neutrosophic Sets and Systems* 12, 127-138.
- Partha Pratim Dey, Surapati Pramanik, Bibhas C. Giri. (2016). Neutrosophic soft multi-attribute group decision making based on grey relational analysis method. *Journal of New Results in Science* 10, 25-37.
- Partha Pratim Dey, Surapati Pramanik, Bibhas C. Giri. (2016). An extended grey relational analysis based multiple attribute decision making in interval neutrosophic uncertain linguistic setting. *Neutrosophic Sets and Systems* 11, 21-30.
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presented at International Conference on non-linear Dynamics, Analysis and Optimization. (ICNDAO-2015) December 9-11, 2015, Organized by Department of Mathematics, University of Jadavpur (Presented by Partha Pratim Dey).

Pranab Biswas, Surapati Pramanik. (2014). Neutrosophic multi-attribute decision-making. 3rd International Conference of Frontiers of Mathematics & Applications (ICFMA-2014) January 29-31, Organized by Department of Mathematics, Burdwan University (Presented by Surapati Pramanik).

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Pranab Biswas, Partha Pratim Dey, Surapati Pramanik. (2014). Grey relational analysis method for single-valued neutrosophic multiple attribute decision making. Presented on National Conference on "Non-linear Dynamics, analysis and optimization (NDAO- 2014)" organized by Department of Mathematics, Jadavpur university, (Under UGC-DRS Programme), Kolkata, January 9-10, 2014.

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Profile

Assistant Lecturer in Information Systems Department at Sadat Academy for Management Sciences, Cairo, Egypt. Obtained her BS in Information Systems from Sadat Academy in 2005 and got the MSc Degree in the field of Adaptive e-learning Systems from Arab Academy for Science and Technology in 2011. PhD student in Computer and Information Systems Department, Faculty of Computer and Information Sciences, Mansoura University, Egypt. Her research areas interest includes advances and uncertainty in e-learning technologies and Neutrosophic approaches for e-learning selection and evaluation.

Research Interests

managing uncertainty in learning management systems; neutrosophic multi criteria decision making for learning management systems selection; neutrosophic expert system for learning management systems evaluation; neutrosophic based approach for adaptive e-learning path.

List of Publications in Neutrosophics

Radwan, Nouran M., M. Badr Senousy, and M. Riad Alaa El Din. Approaches for Managing Uncertainty in Learning Management Systems. *Egyptian Computer Science Journal* 40.2 (2016).

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Profile

Born March 29th, 1974, in Kerman, Iran. BSc of Math., in 1997, University of Isfahan, Isfahan, Iran. MSc in Mathematics, in 2003, from Shahid Bahonar University of Kerman, Kerman, Iran. PhD in Mathematics, in 2014, from Payame Noor University (PNU), Tehran, Iran. From 2003, Lecturer in Mathematics at Payame Noor University (PNU), Kerman, Iran. Courses taught: Algebra: (Advanced algebra, Universal algebra, Linear algebra, Commutative algebra, Algebraic structures), Lattice theory, Fuzzy mathematics, Calculus, Algebraic topology. Referee for *International Journal of Machine Learning and Cybernetics*, Logical Algebras and Hyper Algebras with Applications for the *Scientific World Journal*, *International Conference on Fuzzy System and Data Mining (FSDM 2015)*, *Bulletin of the Section of Logic (BSL)*, Department of Logic, University of Lodz, *The First National Conference on Soft Computing (CSC 2015)*, *Applied Mathematics & Information Sciences*, *International Conference on Fuzzy System and Data Mining (FSDM 2016)*.

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- A. Rezaei, A. Radfar and A. Borumand Saeid, On commutative hyper BE-algebras, *Facta Universitatis (NIS), Ser. Math. Inform.* Vol. 30, No. 4, (2015), 389-399.
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- A. Borumand Saeid, H. S. Kim and A. Rezaei, On BI-algebras, *An. St. Univ. Ovidius Constanta.* (2016) (to appear).
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- A. Rezaei, A. Borumand Saeid and K. Yousefi, On pseudo-CI algebras, (submitted).
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- A. Rezaei and A. Borumand Saeid, Some result on commutative BE-algebras, World Congress of Int. Fuzzy Sys. and Asia Fuzzy Sys. Society Int. Conference., June 2011, Surabaya-Bali, Indonesia.
- A. Rezaei and A. Borumand Saeid, A new type of CI-algebras, 4th Math. Sci. Con. of PNU, September 2011, Ardabil, Iran.
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- R. A. Borzooei, A. Borumand Saeid, A. Rezaei and R. Ameri, Smarandache, N-Filters on CI-algebras, The 44th Annual Iranian Mathematics Conference, 27-30 August 2013, Mashhad, Iran.
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- A. Rezaei, A. Borumand Saeid and R. A. Borzooei, Relation between KU-algebras and BE-algebras, The 44th Annual Iranian Mathematics Conference, 27-30 August 2013, Mashhad, Iran.
- R. A. Borzooei, A. Borumand Saeid, A. Rezaei, A. Radfar and R. Ameri, On pseudo filters in pseudo BE-algebras, The 23rd Iranian Algebra Seminar, Faculty of Computer and Mathematics, November 21-22, 2013, Khansar, Iran.
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- A. Hadipour, A. Rezaei and A. Habibi Moakher, Some types of fuzzy filters in BE-algebra, The 6th National Conference on

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- A. Radfar, A. Rezaei and A. Borumand Saeid, Dual hyper K-algebras and hyper BE-algebras, The 6th National Conference on Mathematics of Payame Noor University, March, 2014, Isfahan, Iran.
- A. Hadipour, A. Rezaei and A. Borumand Saeid, Union-soft implicative Filters of CI-algebras, 14th Iranian Conference on Fuzzy Systems, Faculty of Basic Sciences, Sahand University of Technology, Tabriz, Iran, August 19-21, 2014.
- M. Hamidi, A. Rezaei, A. Borumand Saeid, Relation between hyper BE-algebras and BE-algebras, The 45th Annual Iranian Mathematics Conference, 26-29 August 2014, Semnan, Iran.
- A. Rezaei, A. Borumand Saeid and R. Daneshpayeh, Some results on fuzzy congruence relations in pseudo BE-algebras, IEEE International Conference on Fuzzy Systems, August 2-5, 2015, Istanbul, Turkey.
- A. Rezaei, A. Borumand Saeid, Relation between gi-algebras with BE-algebras, 4th Iranian Joint Congress On Fuzzy And Intelligent Systems, (15th Conference on Fuzzy Systems and 13th Conference on Intelligent Systems), 9-11 Sep 2015, Sistan & Baluchestan, Iran.
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- A. Rezaei, M. Hamidi and S. Jahan Panah, Some results in the category of BE-algebras, 7th Mathematics National Conference of Payame Noor University, 28-29, October 2015, Tabriz, Iran.
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Evolutionary Computation (CSIEC 2016), 19-21, March 2016, Bam, Iran.

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- A. Rezaei, A. Borumand Saeid and R. Daneshpayeh, Some results on hesitant fuzzy fantastic filters in BE-algebras, 8th Mathematics National Conference of Payame Noor University, 11-12, April 2016, Lorestan, Iran.

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Profile

Born in 1957, Dumurdaha, Dist-Hooghly, West Bengal, India. Graduated from University of Burdwan with Mathematics Honours in 1977. Completed MSc in Applied Mathematics in 1986. PhD from Vidyasagar University in 1999. Lecturer in Mathematics in Seva Bharati Mahavidyalaya under Vidyasagar University (1987–1997). Since 1997, associated with Indian Institute of Engineering Science and Technology (IIEST), formerly known as Bengal Engineering and Science University, Shibpur.

Neutrosophic Research

In 2014, Tapan Kumar Roy and Surapati Pramanik presented application of neutrosophic game theory to Jammu Kashmir conflict between India and Pakistan. In 2016, together with Surapati Pramanik, Shyamal Dalapati and Tapan Kumar Roy presented Logistics center location selection approach based on neutrosophic multi-criteria decision making.

Tapan Kumar Roy and Pintu Das presented at first multi-objective non-linear programming problem based on neutrosophic optimization technique and its application in Riser design problem in 2015.

Tapan Kumar Roy, Mridula Sarkar and Samir Dey presented multi-objective neutrosophic optimization technique and its application to structural design in 2016.

Research Interests

neutrosophic optimization; neutrosophic game theory; decision making in neutrosophic environment; neutrosophy.

List of Publications in Neutrosophics

Scientific Papers

- Surapati Pramanik, Shyamal Dalapati, Tapan Kumar Roy. (2016). Logistics center location selection approach based on neutrosophic multi-criteria decision making. "New Trends in Neutrosophic Theories and Applications". In press.
- Mridula Sarkar, Samir Dey, Tapan Kumar Roy. (2016). Multi-objective neutrosophic optimization technique and its application to structural design. *International Journal of Computer Applications* 148 (12), 31-37.
- Pintu Das, Tapan Kumar Roy. (2015). Multi-objective non-linear programming problem based on Neutrosophic Optimization Technique and its application in Riser Design Problem, *Neutrosophic Sets and Systems* 9, 88-95.
- Surapati Pramanik, Tapan Kumar Roy. (2014). Neutrosophic game theoretic approach to Indo-Pak conflict over Jammu-Kashmir. *Neutrosophic Sets and Systems* 2, 82-101.

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List of Publications in Neutrosophics

Articles and Books (Neutrosophic Math. and Computer Sci.)

- A. A. Salama, Florentin Smarandache. Neutrosophic Crisp Set Theory, 2015 USA Book, Educational. Education Publishing 1313 Chesapeake, Avenue, Columbus, Ohio 43212, USA
- A. A. Salama, Said Broumi. Roughness of Neutrosophic Sets, Elixir Appl. Math. 74 (2014), pp. 26833-26837
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- A. A. Salama, Mohamed Abdelfattah, Mohamed Eisa. A Novel Model for Implementing Security over Mobile Ad-hoc Networks using Intuitionistic Fuzzy Function, International Journal of Emerging Technologies in Computational and Applied Sciences (IJETCAS) 2014, Vol. (7), no (1), pp. 1-7
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- A.A. Salama, H. Elagamy. Neutrosophic Filters, International Journal of Computer Science Engineering and Information Technology Research (IJCSEITR), Vol. 3, Issue 1, Mar 2013, pp. 307-312
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- A. A. Salama, O. M. Khaled, K. M. Mahfouz. Neutrosophic Correlation and Simple Linear Regression, Neutrosophic Sets and Systems, 2014, Vol. (5), pp. 3-8
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- A. A. Salama, A. Hassan. On Fuzzy Regression Model, the Egyptian Journal for commercial Studies, Volume 34, No.4. pp. 305-319, (2010)
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- A.A. Salama. A New Form of Fuzzy Hausdroff Space and Related Topics via Fuzzy Idealization, IOSR Journal of Mathematics (IOSR-JM), Volume 3, Issue 5 (2012), pp. 1-4
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- Engineering and Electronic Business, 2014, 6, pp. 15-21, 2014
- A. A. Salama, Florentin Smarandache, Mohamed Eisa. Introduction to Image Processing via Neutrosophic Techniques, Neutrosophic Sets and Systems, Vol. (5), 2014, pp. 59-64
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- I. M. Hanafy, A. A. Salama, O. M. Khaled, K. M. Mahfouz. Correlation of Neutrosophic Sets in Probability Spaces, JAMSI, Vol. 10, No. (1), (2014), pp. 45-52
- A. A. Salama, O. M. Khaled, K. M. Mahfouz. Correlation of Neutrosophic Data in Probability spaces, Egyptian Conference on General Topology and its Applications June 21-23, 2014, Ein Shams University

- A. A. Salama, F. Smarandache. Neutrosophic Crisp Set Theory, 2015 USA Book, Educational. Education Publishing 1313 Chesapeake, Avenue, Columbus, Ohio 43212, USA
- A.A. Salama, Mohamed Eisa, Hewayda ElGhawalby, A.E. Fawzy. Neutrosophic Features for Image Retrieval (Submitted)
- A.A. Salama, Mohamed Eisa, Hewayda ElGhawalby, RadwaFahmy. A Proposed Technique for Enhancing Image in the Neutrosophic Domain (Submitted)
- A.A. Salama, Hewayda ElGhawalby, Shima Fathi. A Neutrosophic Graph Dissimilarity Measure (Submitted)
- Hewayda ElGhawalby, A. A. Salama. Ultra Neutrosophic Crisp Sets and Relations (Submitted)
- Hewayda ElGhawalby, A. A. Salama. A Neutrosophic Filter For Image Enhancement (Submitted)
- A. A. Salama, Mohamed Abdelfattah. New Trends in Neutrosophic Theories and Applications (Submitted)
- A. A. Salama, I.M. Hanafy, M.S. Dabash. Neutrosophic Crisp α -Topological Spaces (Submitted)
- A. A. Salama, I.M. Hanafy, M.S.Dabash. Some Neutrosophic Crisp Nearly Open Sets (Submitted)
- A.A.Salama, Hewayda ElGhawalby, Eman Marzouk. Neutrosophic Mathematical Morphology (Submitted)
- A. A. Salama, F. Smarandache, Neutrosophic Crisp Probability Theory & Decision Making Process (Submitted)
- A. A. Salama. Neutrosophic Spatial Region (Submitted)
- A. A. Salama. Entropy formula for Neutrosophic Informations Systems (Submitted)

MSc and PhD Proposals in Neutrosophic Studies (selected)

- Image Retrieval Using Neutrosophic Sets. Researcher: Aya El-sayed Fawzy. Supervisors: A. A. Salama, I. M. Hanafy & Mohamed Isa
- Enhancing Images using Non-classical Sets. Researcher: Radwa Elsayed Fahmy. Supervisors: A. A. Salama, Mohamed Isa

- Using Neutrosophic Sets for Data Processing. Researcher: Ayman Mohamed Manie. Supervisors: A. A. Salama, Haitham A El-Ghareeb
- Security in MANETs based on Neutrosophic classification. Researcher: Haitham Elwash. Supervisors: A. A. Salama, El-Henawy
- Neutrosophic Crisp Topology. Researcher: Magdy Dabsh. Supervisors: A. A. Salama, I.M. Hanafy
- Neutrosophic Mathematical Morphology. Researcher: Eman Marzouk. Supervisors: A. A. Salama, Hewayda ElGhawalby
- Analysis and Processing Image using Neutrosophic Topology and manifold learning. Researcher: Shima Fathi. Supervisors: A. A. Salama, Hewayda ElGhawalby
- Study Multi-objective Optimization Algorithms for QoS Multicast Routing in Computer Networks. Researcher: Eman Yousef. Supervisors: A. A. Salama, M. Wahead
- Neutrosophic Mathematical Statistics. Researcher: Kaled Mahfouz. Supervisors: A. A. Salama, I. M. Hanafy

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Neutrosophic Research

Introduction of the notion of distance between two single valued neutrosophic sets and studying its properties. Defining several similarity measures between two single valued neutrosophic sets and investigating their characteristics. A measure of entropy of a single valued neutrosophic set had also been introduced. Also investigated single valued neutrosophic multisets and introduced the notions of distance and similarity measures between two single valued neutrosophic multisets, whereof an application of single valued neutrosophic multisets in medical diagnosis was discussed. Introduction of the notion of Quadripartitioned Single Valued Neutrosophic Sets (QSVNS).

List of Publications in Neutrosophics

- Pinaki Majumdar, S. K. Samanta. On similarity and entropy of neutrosophic sets, *Journal of Intelligent and Fuzzy Systems*, 26 (3), 2014, 1245-1252
- R. Chatterjee, P. Majumdar, S. K. Samanta. Single valued neutrosophic multisets, *Annals of Fuzzy Mathematics and Informatics*, 10 (3), 2015, 499-514
- R. Chatterjee, P. Majumdar, S. K. Samanta. On some similarity measures and entropy on quadripartitioned single valued neutrosophic sets, *Journal of Intelligent and Fuzzy Systems*, 30 (4), 2016, 2475-2845

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Research Scholar

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Research Interests

fuzzy set; soft set; neutrosophic set; pattern recognition.

Neutrosophic Research

Working in the field of neutrosophic sets since 2013. Special interest of research is similarity measure between neutrosophic sets, neutrosophic soft sets, interval valued neutrosophic soft sets etc., and their applications in various real life problems (medical diagnosis problem, pattern recognition problem etc.)

List of Publications in Neutrosophics

- Anjan Mukherjee, Sadhan Sarkar. Several similarity measures of neutrosophic soft sets and its application in real life problems, *Annals of Pure and Applied Mathematics* Vol – 7, No. 1, 2014, pp. 1-6
- Anjan Mukherjee, Sadhan Sarkar. Several similarity measures of interval valued neutrosophic soft sets and their application in pattern recognition problems, *Neutrosophic Sets and Systems*, Vol. 6, 2014, pp. 55 – 61
- Anjan Mukherjee, Sadhan Sarkar. A new method measuring similarity between two neutrosophic soft sets and its application in pattern recognition problem, *Neutrosophic Sets and Systems*, Vol. 8, 2015, pp. 72 – 77
- Anjan Mukherjee, Sadhan Sarkar. Supervised pattern recognition using similarity measure between two interval valued neutrosophic soft sets, *Annals Of Fuzzy Mathematics and Informatics* (Accepted)

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Profile

Professor PhD, Dr. habil. in the field of Economic Statistics and Cybernetics (2015). PhD in Economics, in the field of Economic Statistics and Cybernetics (2000). Full Professor at the University of Pitești and PhD Students Coordinator 2. Associate professor at the University of Pitești and from 2013 associate researcher at INCE "Costin C. Kirițescu" of the Romanian Academy, part of the new Centre of Mountain Economics CE-MONT. Research conducted as Vice-President responsible for research of the Romanian Society of Statistics (SRS), which is virtually one of the oldest Romanian scientific research organizations, and as a member of the Romanian Committee of History and Philosophy of Science and Technology (CRIFST) of the Romanian Academy.

There is already a formal recognition of the trans-, inter- and multidisciplinary research activities, materialized in printing the book as editor, at one of the most valuable international scientific publishers, Elsevier (Academic Press): *Econophysics: Background and Applications in Economics, Finance, and Sociophysics*; and also the work as a statistician and econometrician, by winning the special prize "Alecsandru Puiu Tacu" of the Institute of the Romanian Academy, Iași Branch, at ICES Gheorghe Zane, Iași in 2007, 2009, 2010 and 2012 (where he presented a number of over 40 papers), and the diplomas he was awarded for the 140th, 145th and 150th anniversary of official statistics in Romania, and especially the Diplomas of Excellence for the activity in the Octav Onicescu scientific seminar of the Romanian Society of Statistics for the years 2007 - 2015 (over 50 thematic presentations (conferencing) between 2004 and 2015).

He also carries on research and other related activities as a member of the Romanian Regional Science Association (RSRA), the International Association of Regional Sciences (RSAI), and the Mountain Forum in Romania (International Mountain Partnership UN/FAO), usually by presentation and publication of specific work field. The extended list of papers and contributions includes data and information on more than 30 books and nearly 300 published papers (including 25 ISI Thomson Reuters and other 75 papers indexed in international data bases), as well as a relatively large number of projects and contracts.

List of Publications in Neutrosophics

Gheorghe Săvoiu. (2007) A definition of statistics by the fuzzy logic, [O definiție a statisticii conform logicii fuzzy], in Talabă, I. (coord), Progrese in teoria deciziilor economice in conditii de risc si incertitudine, vol 2, pp. 111-126, Performantica Publishing house, Iasi, ISBN 978-973-730-368-8.

Gheorghe Săvoiu, Ion Iorga Simăn, Constantin Manea, Marian Țaicu. (2015) Paradoxism and rural tourism [Paradoxismul si turismul rural], Conferința științifică internațională, Vatra Dornei, vol. 37, ISBN 978-606-13-2516-0, Editura PIM, Iași, pp. 99 -110.

Tudor Marin, Gheorghe Săvoiu. Addressing The Dimensions Of Education And Integrated Curriculum Via Generalized Fuzzy Logic, In Euromentor Journal, Volume VI, No. 1/March 2015, pp. 61-73. ISSN 2068-780X available at: <http://euromentor.ucdc.ro/euromentor-vol7no-1.pdf>

Florentin Smarandache, Gheorghe Săvoiu. (2015) Neutrosophic Index Numbers: Neutrosophic Logic Applied In The Statistical Indicators Theory, Critical Review A Publication of Society for Mathematics of Uncertainty, vol XI, 2015, Center for Mathematics of Uncertainty Creighton University, US, pp 67-101

Nasir Shah

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Profile

BSc and MSc from Punjab University, Lahore, Pakistan, in 1999 and 2001, respectively, and MS in Mathematics from International Islamic University Islamabad, Pakistan, in 2008. Currently, a PhD scholar, also teaching to MSc Math's classes in Islamabad Model College For Girls, F-6/2 Islamabad, Pakistan. More than 15 years teaching experience at different universities and colleges. Member of Pakistan Mathematical Society for the last 7 years.

Research Interests

graphs; fuzzy and bipolar fuzzy graphs; soft sets; soft graphs; neutrosophic graphs.

List of Publications in Neutrosophics

- N. Shah, A. Hussain. Neutrosophic Soft Graphs, Neutrosophic Sets and Systems, vol. 11 (2016), 31-44. (2)
- N. Shah. Some Studies In Neutrosophic Graphs, Neutrosophic Sets and Systems (accepted).
- N. Shah, M. Irfan Ali, A. Kiani, M. S. Kamran. Regular Neutrosophic Graphs (submitted).
- N. Shah, Said Broumi. Irregular Neutrosophic Graphs (submitted).
- N. Shah, M. Irfan Ali, M. Shabbir, S. Kamran. Information Graphs (submitted).
- N. Shah, M. Shabbir, S. Kamran. Information Graphs (submitted)

Philomina Simon

Assistant Professor

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Thiruvananthapuram / INDIA



Profile

MTEch in Computer Science and Engineering from Department of Computer Science at Pondicherry Central University, India in 2009. BTech in Information Technology in Govt. Engineering College Bartonhill affiliated to University of Kerala. Lecturer at Marian Engineering College, Trivandrum during 2005-2007. Assistant Professor (2009) of MarBaselious Engineering College, Trivandrum. Industry experience as Assistant Systems Engineer in Tata Consultancy Services (TCS), Mumbai during 2009-2010. Joined as an Assistant Professor in University of Kerala in 2010. Member of various professional bodies such as IEEE, IACSIT.

Research Interests

automatic cloud detection; color texture image segmentation; image processing; fractals; information retrieval; data mining.

List of Publications in Neutrosophics

Jeethu Mary Mathew, Philomina Simon. Color Texture Image Segmentation Based on Neutrosophic Set and Nonsub-sampled Contourlet Transformation, International Conference on Applied Algorithms, pp 164-173, 2014, published by Springer LNCS

Jeethu Mary Mathew, Surya S.R, Philomina Simon. Automatic Cloud Detection Based on Neutrosophic Set in Satellite Images, IEEE International Conference on Control, Communication and Computing (ICCC 2013), pp. 210-215, 2013

Dr.

Florentin Smarandache

Scientist, artist and writer

Full Professor of Mathematics

Founder of the Neutrosophics

and editor-in-chief of the publication

“Neutrosophic Sets and Systems”

President of Neutrosophic Science

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Profile

Post-doctoral researches at Okayama University of Science (Japan) between 12 December 2013 - 12 January 2014; at Guangdong University of Technology (Guangzhou, China), 19 May - 14 August 2012; at ENSIETA (National Superior School of Engineers and Study of Armament), Brest, France, 15 May - 22 July 2010; and for two months, June-July 2009, at Air Force Research Laboratory in Rome, NY, USA (under State University of New York Institute of Technology).

Graduated from the Department of Mathematics and Computer Science at the University of Craiova in 1979 first of his class graduates, earned a Ph. D. in Mathematics from the State University Moldova at Kishinev in 1997, and continued postdoctoral studies at various American Universities such as University of Texas at Austin, University of Phoenix, etc. after emigration.

In U.S. he worked as a software engineer for Honeywell (1990-1995), adjunct professor for Pima Community College (1995-1997), in 1997 Assistant Professor at the University of New Mexico, Gallup Campus, promoted to Associate Professor of Mathematics in 2003, and to Full Professor in 2008. Between 2007-2009 he was the Chair of Math & Sciences Department.

In mathematics he introduced the degree of negation of an axiom or theorem in geometry (see the Smarandache geometries which can be partially Euclidean and partially non-Euclidean, 1969, <http://fs.gallup.unm.edu/Geometries.htm>), the multi-structure (see the Smarandache n-structures, where a weak structure contains an island of a stronger structure, <http://fs.gallup.unm.edu/Algebra.htm>), and multi-space (a combination of heterogeneous spaces), <http://fs.gallup.unm.edu/Multispace.htm> .

He created and studied many sequences and functions in number theory.

In 1995 Florentin Smarandache introduced the neutrosophic set, neutrosophic logic, neutrosophic probability and neutrosophic statistics based on three components: degree of truth - membership (T), degree of indeterminacy (I), and degree of falsehood-nonmembership (F), and he published the first world publication on neutrosophic in 1998.

He generalized [1995] the fuzzy, intuitive, paraconsistent, multi-valent, dialetheist logics to the 'neutrosophic logic' (also in the Denis Howe's Dictionary of Computing, England) and, similarly, he generalized the fuzzy set to the 'neutrosophic set' (and its derivatives: 'paraconsistent set', 'intuitionistic set', 'dialetheist set', 'paradoxist set', 'tautological set') [<http://fs.gallup.unm.edu/ebook-neutrosophics5.pdf>].

He coined the words "neutrosophy" [(French neutre < Latin neuter, neutral, and Greek sophia, skill/wisdom) means knowledge of neutral thought] and its derivatives: neutrosophic, neutrosophication, neutrosophicator, deneutrosophication, deneutrosophicator, etc.

In 2003 together with W. B. Vasantha Kandasamy he introduced the Neutrosophic Algebraic Structures, based on sets of Neutrosophic Numbers [i.e. numbers of the form $a+bI$, where a, b are real or complex numbers, and $I = \text{Indeterminacy}$, with $I^n = I$ for n positive non-null integer, $0I = I$, $I/I = \text{undefined}$, and $nI+mI = (n+m)I$].

In 2006 he introduced the degree of dependence/independence between the neutrosophic components T, I, F.

In 2007 he extended the neutrosophic set to Neutrosophic Overset (when some neutrosophic component is > 1), and to Neutrosophic Underset (when some neutrosophic component is < 0), and to and to Neutrosophic Offset (when some neutrosophic components are off the interval $[0, 1]$, i.e. some neutrosophic component > 1 and some

neutrosophic component < 0). Then, similar extensions to respectively Neutrosophic Over/Under/Off Logic, Measure, Probability, Statistics etc.

Then, introduced the Neutrosophic Tripolar Set and Neutrosophic Multipolar Set, also the Neutrosophic Tripolar Graph and Neutrosophic Multipolar Graph.

He then generalized the Neutrosophic Logic/Set/Probability to Refined Neutrosophic Logic/Set/Probability [2013], where T can be split into subcomponents T_1, T_2, \dots, T_p , and I into I_1, I_2, \dots, I_r , and F into F_1, F_2, \dots, F_s , where $p+r+s = n \geq 1$. Even more: T, I, and/or F (or any of their subcomponents T_j, I_k , and/or F_l) could be countable or uncountable infinite sets.

In 2015 he refined the indeterminacy "I", within the neutrosophic algebraic structures, into different types of indeterminacies (depending on the problem to solve), such as I_1, I_2, \dots, I_p with integer $p \geq 1$, and obtained the refined neutrosophic numbers of the form $N_p = a + b_1I_1 + b_2I_2 + \dots + b_pI_p$ where a, b_1, b_2, \dots, b_p are real or complex numbers, and a is called the determinate part of N_p , while for each k in $\{1, 2, \dots, p\}$ I_k is called the k -th indeterminate part of N_p . Then consequently he extended the neutrosophic algebraic structures to Refined Neutrosophic Algebraic Structures [or Refined Neutrosophic I-Algebraic Structures] (2015), which are algebraic structures based on sets of the refined neutrosophic numbers $a + b_1I_1 + b_2I_2 + \dots + b_pI_p$.

He introduced the (T, I, F)-Neutrosophic Structures [2015]. In any field of knowledge, each structure is composed from two parts: a space, and a set of axioms (or laws) acting (governing) on it. If the space, or at least one of its axioms (laws), has some indeterminacy, that structure is a (T, I, F)-Neutrosophic Structure. And he extended them to the (T, I, F)-Neutrosophic I-Algebraic Structures [2015], i.e. algebraic structures based on neutrosophic numbers of the form $a + bI$, but also having indeterminacy related to the structure space (elements which only partially belong to the space, or elements we know nothing if they belong to the space or not) or indeterminacy related to at least an axiom (or law) acting on the structure space. Then he extended them to Refined (T, I, F)-Neutrosophic Refined I-Algebraic Structures.

Also, he proposed an extension of the classical probability and the imprecise probability to the 'neutrosophic probability' [1995], that he defined as a tridimensional vector whose components are real subsets of

the non-standard interval $] -0, 1+[$, introduced the neutrosophic measure and neutrosophic integral [<http://fs.gallup.unm.edu/NeutrosophicMeasureIntegralProbability.pdf>], and also extended the classical statistics to neutrosophic statistics [<http://fs.gallup.unm.edu/NeutrosophicStatistics.pdf>].

Since 2002, together with Dr. Jean Dezert from Office National de Recherches Aeronautiques in Paris, worked in information fusion and generalized the Dempster-Shafer Theory to a new theory of plausible and paradoxist fusion (Dezert-Smarandache Theory): <http://fs.gallup.unm.edu/DSmT.htm> .

In 2004 he designed an algorithm for the Unification of Fusion Theories and rules (UFT) used in bioinformatics, robotics, military.

In physics he found a series of paradoxes (see the quantum smarandache paradoxes), and considered the possibility of a third form of matter, called unmatter [2004], which is a combination of matter and antimatter - presented at Caltech (American Physical Society Annual Meeting, 2010) and Institute of Atomic Physics (Magurele, Romania 2011).

Based on a 1972 manuscript, when he was a student in Rm. Valcea, he published in 1982 the hypothesis that 'there is no speed barrier in the universe and one can construct any speed', (<http://scienceworld.wolfram.com/physics/SmarandacheHypothesis.htm>). This hypothesis was partially validated on September 22, 2011, when researchers at CERN experimentally proved that the muon neutrino particles travel with a speed greater than the speed of light.

Upon his hypothesis he proposed an Absolute Theory of Relativity [free of time dilation, space contraction, relativistic simultaneities and relativistic paradoxes which look alike science fiction not fact]. Then he extended his research to a more diversified Parameterized Special Theory of Relativity (1982): <http://fs.gallup.unm.edu/ParameterizedSTR.pdf> and generalized the Lorentz Contraction Factor to the Oblique-Contraction Factor for lengths moving at an oblique angle with respect to the motion direction, then he found the Angle-Distortion Equations (1983): <http://fs.gallup.unm.edu/NewRelativisticParadoxes.pdf>.

He considered that the speed of light in vacuum is variable, depending on the moving reference frame; that space and time are separated entities; also the redshift and blueshift are not entirely due to the Doppler Effect, but also to the Medium Gradient and Refraction Index

(which are determined by the medium composition: i.e. its physical elements, fields, density, heterogeneity, properties, etc.); and that the space is not curved and the light near massive cosmic bodies bends not because of the gravity only as the General Theory of Relativity asserts (Gravitational Lensing), but because of the Medium Lensing.

In order to make the distinction between clock and time, he suggested a first experiment with different clock types for the GPS clocks, for proving that the resulted dilation and contraction factors are different from those obtained with the cesium atomic clock; and a second experiment with different medium compositions for proving that different degrees of redshifts/blushifts and different degrees of medium lensing would result.

He introduced the superluminal and instantaneous physics (domains that study the physical laws at superluminal and respectively instantaneous velocities), and the neutrosophic physics that describes collections of objects or states that are individually characterized by opposite properties, or are characterized neither by a property nor by the opposite of the property. Such objects or states are called neutrosophic entities.

In philosophy he introduced in 1995 the 'neutrosophy', as a generalization of Hegel's dialectic, which is the basement of his researches in mathematics and economics, such as 'neutrosophic logic', 'neutrosophic set', 'neutrosophic probability', 'neutrosophic statistics'.

Neutrosophy is a new branch of philosophy that studies the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra. This theory considers every notion or idea $\langle A \rangle$ together with its opposite or negation $\langle \text{Anti-}A \rangle$ and the spectrum of "neutralities" $\langle \text{Neut-}A \rangle$ (i.e. notions or ideas located between the two extremes, supporting neither $\langle A \rangle$ nor $\langle \text{Anti-}A \rangle$). The $\langle \text{Neut-}A \rangle$ and $\langle \text{Anti-}A \rangle$ ideas together are referred to as $\langle \text{Non-}A \rangle$. According to this theory every idea $\langle A \rangle$ tends to be neutralized and balanced by $\langle \text{Anti-}A \rangle$ and $\langle \text{Non-}A \rangle$ ideas - as a state of equilibrium. As a consequence, he generalized the triad thesis-antithesis-synthesis to the tetrad thesis-antithesis-neutrothesis-neutrosynthesis [<http://fs.gallup.unm.edu/neutrosophy.htm>].

He extended the Lupasco-Nicolescu s Law of Included Middle [$\langle A \rangle$, $\langle \text{non}A \rangle$, and a third value $\langle T \rangle$ which resolves their contradiction at another level of reality] to the Law of Included Multiple-Middle [$\langle A \rangle$,

<antiA>, and <neutA>, where <neutA> is split into a multitude of neutralities between <A> and <antiA>, such as <neut1A>, <neut2A>, etc.]. The <neutA> value (i.e. neutrality or indeterminacy related to <A>) actually comprises the included middle value. Also, he extended the Principle of Dynamic Opposition [opposition between <A> and <antiA>] to the Principle of Dynamic Neutrosophic Opposition [which means oppositions among <A>, <antiA>, and <neutA>]; [<http://fs.gallup.unm.edu/LawIncludedMultiple-Middle.pdf>].

Other small contributions he had in psychology [<http://fs.gallup.unm.edu/psychology.htm>], and in sociology [<http://fs.gallup.unm.edu/sociology.htm>].

Invited to lecture at University of Berkeley (2003), NASA Langley Research Center-USA (2004), NATO Advance Study Institute-Bulgaria (2005), Jadavpur University-India (2004), Institute of Theoretical and Experimental Biophysics-Russia (2005), Bloomsburg University-USA (1995), University Sekolah Tinggi Informatika & Komputer Indonesia-Malang and University Kristen Satya Wacana Salatiga-Indonesia (2006), Minufiya University (Shebin Elkom)-Egypt (2007), Air Force Institute of Technology Wright-Patterson AFB in Dayton [Ohio, USA] (2009), Universitatea din Craiova - Facultatea de Mecanica [Romania] (2009), Air Force Research Lab & Griffiss Institute [Rome, NY, USA] (2009), COGIS 2009 (Paris, France), ENSIETA (Brest, Franta) - 2010, Romanian Academy - Institute of Solid Mechanics and Commission of Acoustics (Bucharest - 2011), Guangdong University of Technology (Guangzhou, China) - 2012, Okayama University of Sciences (Japan) - 2013, Osaka University (Japan) - 2014, Universidad Nacional de Quilmes (Argentina) - 2014, Universidad Complutense de Madrid (Spain) - 2014, Univ. Transilvania Brasov - 2015; Vietnam National University, Le Quy Don Technical University (Hanoi) and Hanoi University, also Ho Chi Minh City University of Technology (HUTECH), Nguyen Tat Thanh University (Ho Chi Minh City) - 2016, etc.

Presented papers at many Sensor or Information Fusion International Conferences {Australia - 2003, Sweden - 2004, USA (Philadelphia - 2005, Seattle - 2009, Chicago - 2011, Washington DC - 2015), Spain (Barcelona - 2005, Salamanca - 2014), Italy - 2006, Belgium - 2007, Canada -2007, Germany -2008, Scotland- 2010, Singapore - 2012, Turkey - 2013}. Presented papers at IEEE GrComp International Conferences {Georgia State University at Atlanta - 2006, Kaohsiung National University

in Taiwan - 2011}, International Conference on Advanced Mechatronic Systems (Tokyo University of Agriculture and Technology, Japan) - 2012.

He received the 2011 Romanian Academy "Traian Vuia" Award for Technical Science (the highest in the country); Doctor Honoris Causa of Academia DacoRomana from Bucharest - 2011, and Doctor Honoris Causa of Beijing Jiaotong University (one of the highest technical universities of China) - 2011; the 2012 New Mexico - Arizona Book Award & 2011 New Mexico Book Award at the category Science & Math (for Algebraic Structures, together with Dr. W. B. Vasantha Kandasamy) on 18 November 2011 in Albuquerque; also, the Gold Medal from the Telesio-Galilei Academy of Science from England in 2010 at the University of Pecs - Hungary (for the Smarandache Hypothesis in physics, and for the Neutrosophic Logic), and the Outstanding Professional Service and Scholarship from The University of New Mexico - Gallup (2009, 2005, 2001).

Very prolific, he is the author, co-author, editor, and co-editor of 180 books published by about forty publishing houses (such as university and college presses, professional scientific and literary presses, such as Springer Verlag (in print), Univ. of Kishinev Press, Pima College Press, ZayuPress, Haiku, etc.) in ten countries and in many languages, and 250 scientific articles and notes, and contributed to over 100 literary and 50 scientific journals from around the world.

He published many articles on international journals, such as: Multiple-Valued Logic - An International Journal (now called Multiple-Valued Logic & Soft Computing), International Journal of Social Economics, International Journal of Applied Mathematics, International Journal of Tomography & Statistics, Applied Physics Research (Toronto), Far East Journal of Theoretical Statistics, International Journal of Applied Mathematics and Statistics (Editor-in-Chief), Gaceta Matematica (Spain), Humanistic Mathematics Network Journal, Bulletin of Pure and Applied Sciences, Progress in Physics, Infinite Energy (USA), Information & Security: An International Journal, InterStat - Statistics on the Internet (Virginia Polytechnic Institute and State University, Blacksburg, USA), American Mathematical Monthly, Mathematics Magazine, Journal of Advances in Information Fusion (JAIF), Zentralblatt f r Mathematik (Germany; reviewer), Nieuw Archief voor Wiskunde (Holland), Advances in Fuzzy Sets and Systems, Advances and Applications in Statistics,

Critical Review (Society for Mathematics of Uncertainty, Creighton University - USA), Bulletin of Statistics & Economics, International Journal of Artificial Intelligence, Fuzzy Sets and Systems, Journal of Computer Science and Technology, The Icfai University Journal of Physics (India), Hadronic Journal (USA), Intelligencer (Göttingen, Germany), Notices of the American Mathematical Society, etc. and on many International Conference Proceedings.

Some of them can be downloaded from the LANL / Cornell University (<http://arXiv.org/find>) and the CERN web sites.

During the Ceausescu's era he got in conflict with authorities. In 1986 he did the hunger strike for being refused to attend the International Congress of Mathematicians at the University of Berkeley, then published a letter in the Notices of the American Mathematical Society for the freedom of circulating of scientists, and became a dissident. As a consequence, he remained unemployed for almost two years, living from private tutoring done to students. The Swedish Royal Academy Foreign Secretary Dr. Olof G. Tandberg contacted him by telephone from Bucharest.

Not being allowed to publish, he tried to get his manuscripts out of the country through the French School of Bucharest and tourists, but for many of them he lost track.

Escaped from Romania in September 1988 and waited almost two years in the political refugee camps of Turkey, where he did unskilled works in construction in order to survive: scavenger, house painter, whetstoner. Here he kept in touch with the French Cultural Institutes that facilitated him the access to books and rencontres with personalities.

Before leaving the country he buried some of his manuscripts in a metal box in his parents vineyard, near a peach tree, that he retrieved four years later, after the 1989 Revolution, when he returned for the first time to his native country. Other manuscripts, that he tried to mail to a translator in France, were confiscated by the secret police and never returned.

He wrote hundreds of pages of diary about his life in the Romanian dictatorship (unpublished), as a cooperative teacher in Morocco ("Professor in Africa", 1999), in the Turkish refugee camp ("Escaped... / Diary From the Refugee Camp", Vol. I, II, 1994, 1998), and in the American exile - diary which is still going on.

But he's internationally known as the literary school leader for the "paradoxism" movement which has many advocates in the world, that he set up in 1980, based on an excessive use of antitheses, antinomies, contradictions, paradoxes in creation paradoxes - both at the small level and the entire level of the work - making an interesting connection between mathematics, philosophy, and literature [<http://fs.gallup.unm.edu/a/paradoxism.htm>].

He introduced the 'paradoxist distich', 'tautologic distich', and 'dualistic distich', 'paradoxist quatrain' etc. inspired from the mathematical logic [<http://fs.gallup.unm.edu/a/literature.htm>].

Literary experiments he realized in his dramas: Country of the Animals, where there is no dialogue!, and An Upside-Down World, where the scenes are permuted to give birth to one billion of billions of distinct dramas! [<http://fs.gallup.unm.edu/a/theatre.htm>].

He stated: "Paradoxism started as an anti-totalitarian protest against a closed society, where the whole culture was manipulated by a small group. Only their ideas and publications counted. We couldn't publish almost anything. Then, I said: Let's do literature... without doing literature! Let's write... without actually writing anything. How? Simply: literature-object! 'The flight of a bird', for example, represents a "natural poem", that is not necessary to write down, being more palpable and perceptible in any language that some signs laid on the paper, which, in fact, represent an "artificial poem": deformed, resulted from a translation by the observant of the observed, and by translation one falsifies.

Therefore, a mute protest we did!

Later, I based it on contradictions. Why? Because we lived in that society a double life: an official one - propagated by the political system, and another one real. In mass-media it was promulgated that 'our life is wonderful', but in reality 'our life was miserable'. The paradox flourishing! And then we took the creation in derision, in inverse sense, in a syncretic way. Thus the paradoxism was born. The folk jokes, at great fashion in Ceausescu's 'Epoch', as an intellectual breathing, were superb springs.

The "No" and "Anti" from my paradoxist manifestos had a creative character, not at all nihilistic."

Paradoxism, following the line of Dadaism, Lettrism, absurd theater, is a kind of up-side down writings!

He did many poetical experiments and published paradoxist manifestos: "Le Sens du Non-Sens" (1983), "Anti-chambres/Antipoesies/Bizzareries" (1984, 1989), "NonPoems" (1990), changing the French and respectively English linguistics clichés. While "Paradoxist Distiches" (1998) introduces new species of poetry with fixed form.

Eventually he edited three International Anthologies on Paradoxism (2000-2004) with texts from about 350 writers from around the world in many languages.

"MetaHistory" (1993) is a theatrical trilogy against the totalitarianism again, with dramas that experiment towards a total theater: "Formation of the New Man", "An Upside - Down World", "The Country of the Animals". The last drama, that pioneers no dialogue on the stage, was awarded at the International Theatrical Festival of Casablanca (1995).

He translated them into English as "A Trilogy in pARadOXisM: avant-garde political dramas"; and they were published by ZayuPress (2004).

"Trickster's Famous Deeds" (1994, auto-translated into English 2000), theatrical trilogy for children, mixes the Romanian folk tradition with modern and SF situations.

His first novel is called "NonNovel" (1993) and satirizes the dictatorship in a gloomy way, by various styles and artifice within one same style.

"Faulty Writings" (1997) is a collection of short stories and prose within paradoxism, bringing hybrid elements from rebus and science into literature.

His experimental albums "Outer-Art" (Vol. I, 2000 & Vol. II: The Worst Possible Art in the World!, 2003) comprises over-paintings, non-paintings, anti-drawings, super-photos, foreseen with a manifesto: "Ultra-Modernism?" and "Anti-manifesto" [<http://fs.gallup.unm.edu/a/oUTER-aRT.htm>].

Art was for Dr. Smarandache a hobby. He did:

- graphic arts for his published volumes of verse: "Anti-chambres/Antipoesies/ Bizzareries" (mechanical drawings), "NonPoems" (paradoxist drawings), "Dark Snow" & "Circles of light" (covers);
- paradoxist collages for the "Anthology of the Paradoxist Literary Movement", by J. -M. Levenard, I. Rotaru, A. Skemer;

- covers and illustrations of books, published by "Dorul" Publ. Hse., Aalborg, Denmark;

- illustrations in the journal: "Dorul" (Aalborg, Denmark).

Many of his art works are held in "The Florentin Smarandache Papers" Special Collections at the Arizona State University, Tempe, and Texas State University, Austin (USA), also in the National Archives of Valcea and Romanian Literary Museum (Romania), and in the Musee de Bergerac (France).

Twelve books were published that analyze his literary creation, among them: "Paradoxism's Aesthetics" by Titu Popescu (1995), and "Paradoxism and Postmodernism" by Ion Soare (2000).

He was nominated by the Academia DacoRomana from Bucharest for the 2011 Nobel Prize in Literature for his 75 published literary books.

Hundreds of articles, books, and reviews have been written about his activity around the world. The books can be downloaded from this Digital Library of Science:

- <http://fs.gallup.unm.edu/eBooks-otherformats.htm>

and from the Digital Library of Arts and Letters:

- <http://fs.gallup.unm.edu/eBooksLiterature.htm> .

As a Globe Trekker he visited over 50 countries that he wrote about in his memories. In 2015 he went to an expedition in Antarctica (see his Photo Gallery at: <http://fs.gallup.unm.edu/photo/GlobeTrekker.html>).

International Conferences:

- First International Conference on Smarandache Type Notions in Number Theory, August 21-24, 1997, organized by Dr. C. Dumitrescu & Dr. V. Seleacu, University of Craiova, Romania.
- International Conference on Smarandache Geometries, May 3-5 2003, organized by Dr. M. Khoshnevisan, Griffith University, Gold Coast Campus, Queensland, Australia.
- International Conference on Smarandache Algebraic Structures, December 17-19, 2004, organized by Prof. M. Mary John, Mathematics Department Chair, Loyola College, Madras, Chennai - 600 034 Tamil Nadu, India.

[Presentation by Dmitri Rabounski, *Progress in Physics*, 1/2014]

List of Publications in Neutrosophics (selected)

Books

- Neutrosophic Overset, Neutrosophic Underset, and Neutrosophic Offset. Similarly for Neutrosophic Over-/Under-/Off- Logic, Probability, and Statistics, by Florentin Smarandache, 168 p., Pons Editions, Bruxelles, Belgique, 2016; <https://hal.archives-ouvertes.fr/hal-01340830> ; <https://arxiv.org/ftp/arxiv/papers/1607/1607.00234.pdf>
- Neutrosophic Set Approach to Algebraic Structures, by Madad Khan, Florentin Smarandache, Saima Anis, Fazal Tahir, 234 p., Brussels: Pons Editions, 2016.
- MOD Cognitive Maps Models and MOD Natural Neutrosophic Cognitive Maps Models, by W. B. Vasantha Kandasamy, Ilanthenral K., Florentin Smarandache, EuropaNova, Brussels, 223 p., 2016.
- MOD Relational Maps Models and MOD Natural Neutrosophic Relational Maps Models, by W. B. Vasantha Kandasamy, Ilanthenral K., Florentin Smarandache, EuropaNova, Brussels, 278 p., 2016.
- Semigroups on MOD Natural Neutrosophic Elements, by W. B. Vasantha Kandasamy, Ilanthenral K., Florentin Smarandache, EuropaNova, Brussels, 232 p., 2016.
- Nidus Idearum, Scilogs, I: De Neutrosophia, by Florentin Smarandache, Pons, Bruxelles, 107 p., 2016.
- Unmatter Plasma, Relativistic Oblique-Length Contraction Factor, Neutrosophic Diagram and Neutrosophic Degree of Paradoxicity. Articles and Notes, by Florentin Smarandache, Pons: Brussels, Belgium, 230 p., 2015.
- Natural Neutrosophic Numbers and MOD Neutrosophic Numbers. Series on MOD Mathematics, by W. B. Vasantha Kandasamy, K. Ilanthenral, Florentin Smarandache: EuropaNova: Brussels, Belgium, 188 p., 2015.
- Symbolic Neutrosophic Theory, by Florentin Smarandache, Europa Nova, Bruxelles, 194 p., 2015; <https://arxiv.org/ftp/arxiv/papers/1512/1512.00047.pdf>

- Neutrosophic Precalculus and Neutrosophic Calculus, by Florentin Smarandache, EuropaNova, Brussels, Belgium, 154 p., 2015; <https://arxiv.org/ftp/arxiv/papers/1509/1509.07723.pdf>
- Uncertainty Communication Solution in Neutrosophic Key, editors Florentin Smarandache, Bianca Teodorescu, Mirela Teodorescu, EuropaNova asbl, Brussels, Belgium, 100 p., 2015.
- Neutrosophic Graphs: A New Dimension to Graph Theory, by W. B. Vasantha Kandasamy, Ilanthenral K, Florentin Smarandache, EuropaNova, Bruxelles, 125 p., 2015.
- Quaestiones Neutrosophicae, by Florentin Smarandache, Yale Landsberg; Foreword by Mumtaz Ali & Said Broumi; Neutrosophic Science International Association; Educational Publisher, Columbus, Ohio, USA, 44 p., 2015.
- Neutrosophic Crisp Set Theory, by A. A. Salama & Florentin Smarandache, Educational Publisher, Columbus, 163 p., 2015.
- Distance in Matrices and Their Applications to Fuzzy Models and Neutrosophic Models, by W. B. Vasantha Kandasamy, Florentin Smarandache, Ilanthenral K., 169 p., EuropaNova, Brussels, Belgium, 2014.
- Neutrosophic Theory and its Applications, Collected Papers, Vol. 1, by Florentin Smarandache, 480 p., EuropaNova, Brussels, Belgium, 2014.
- New Research on Neutrosophic Algebraic Structures, by Mumtaz Ali, Florentin Smarandache, Muhammad Shabir, EuropaNova, Brussels, Belgium, 333 p., 2014.
- Law of Included Multiple-Middle & Principle of Dynamic Neutrosophic Opposition, by Florentin Smarandache, EuropaNova & Educational, Brussels-Columbus (Belgium-USA), 136 p., 2014.
- Topical Communication Uncertainties, editors: Stefan Vladutescu, Florentin Smarandache, Daniela Gifu, Alina Tenescu, Sitech Publishing House (Craiova, Romania) and Zip Publishing (Columbus, Ohio, USA), 300 p., 2014.

- Current Communication Difficulties, editors: Florentin Smarandache, Stefan Vladutescu, Alina Tenescu, Sitech Publishing House (Craiova, Romania) and Zip Publishing (Columbus, Ohio, USA), 300 p., 2014.
- New Techniques to Analyse the Prediction of Fuzzy Models, by W. B. Vasantha Kandasamy, Florentin Smarandache, Ilanthenral K, EuropaNova, Brussels, Belgium, 242 p., 2014.
- Pseudo Lattice Graphs and their Applications to Fuzzy and Neutrosophic Models, by W. B. Vasantha Kandasamy, Florentin Smarandache, Ilanthenral K, EuropaNova, Brussels, Belgium, 275 p., 2014.
- Algebraic Structures on Real and Neutrosophic Semi Open Squares, by W. B. Vasantha Kandasamy, Florentin Smarandache, Education Publisher Inc., Ohio, 206 p., 2014.
- Soft Neutrosophic Algebraic Structures and Their Generalization, Vol. 1, by Florentin Smarandache, Mumtaz Ali, Muhammad Shabir, Education Publishing, Ohio, 264 p., 2014.
- Communication Neutrosophic Routes, coordinators Florentin Smarandache, Stefan Vladutescu, Educational Publisher, Columbus, 217 p., 2014.
- Algebraic Structures on Fuzzy Unit Square and Neutrosophic Unit Square, by W. B. Vasantha Kandasamy, Florentin Smarandache, Educational Publisher, Columbus, 221 p., 2014.
- Introduction to Neutrosophic Statistics, Sitech and Education Publisher, Craiova, 123 p., 2014; <https://arxiv.org/ftp/arxiv/papers/1406/1406.2000.pdf>
- Neutrosophic Emergencies and Incidencies, by Florentin Smarandache, Ștefan Vlăduțescu, Verlag LAP LAMBERT, OmniScriptum, GmbH & Co. KG, Saarbrücken, Deutschland / Germany, 248 p., 2013; DOI: 10.13140/2.1.3530.2400.
- Introduction to Neutrosophic Measure, Neutrosophic Integral, and Neutrosophic Probability, by Florentin Smarandache, Sitech & Educational, Craiova, Columbus, 140 p., 2013; <https://arxiv.org/ftp/arxiv/papers/1311/1311.7139.pdf>

- Fuzzy Neutrosophic Models for Social Scientists, by W. B. Vasantha Kandasamy, Florentin Smarandache, Education Publisher, Columbus, OH, 167 pp., 2013.
- Neutrosophic Super Matrices and Quasi Super Matrices, by W. B. Vasantha Kandasamy, Florentin Smarandache, 200 p., Educational Publisher, Columbus, 2012.
- Neutrosafia ca reflectarea a realității neconvenționale, de Florentin Smarandache, Tudor Păroiu, Ed. Sitech, Craiova, Romania, 130 p., 2012.
- Neutrosophic Interpretation of The Analects of Confucius (弗羅仁汀·司馬仁達齊, 傅昱華 論語的中智學解讀和擴充 – 正反及中智論語), English-Chinese Bilingual (英汉双语), by Florentin Smarandache, Fu Yuhua, Zip Publisher, Columbus, 268 p., 2011.
- Neutrosophic Interval Bialgebraic Structures, by W. B. Vasantha Kandasamy, Florentin Smarandache, Zip Publishing, Columbus, 195 p., 2011.
- Finite Neutrosophic Complex Numbers, by W. B. Vasantha Kandasamy, Florentin Smarandache, Zip Publisher, Columbus, Ohio, USA, 220 p., 2011.
- Neutrosophic Interpretation of Tao Te Ching (弗羅仁汀·司馬仁達齊, 付昱華 道德經的中智學解讀和擴充 – 正反及中智道德經) (English-Chinese bilingual), by Florentin Smarandache & Fu Yuhua, Translation by Fu Yuhua, Chinese Branch Kappa, Beijing, 208 p., 2011.
- Neutrosophic Bilinear Algebras and Their Generalization, by W.B. Vasantha Kandasamy, Florentin Smarandache, Svenska Fysikarkivet, Stockholm, Sweden, 402 p., 2010.
- Multispace & Multistructure. Neutrosophic Trans-disciplinarity (100 Collected Papers of Sciences), Vol. IV, by Florentin Smarandache, North-European Scientific Publishers, Hanko, Finland, 800 p., 2010.
- New Classes of Neutrosophic Linear Algebras, by W.B. Vasantha Kandasamy, F. Smarandache, K, Ilanthenral, CuArt, Slatina, 286 p., 2010.

- Neutrosophic Physics: More Problems, More Solutions (Collected Papers), editor Florentin Smarandache, Nort-European Scientific Publishers, Hanko, Finland, 94 p., 2010.
- Neutrosophic Logic, Wave Mechanics, and Other Stories (Selected Works: 2005-2008), by F. Smarandache, V. Christianto, Kogaion Editions, Bucharest, 129 p., 2009.
- Chinese Neutrosophy and Taoist Natural Philosophy [Chinese language], by F. Smarandache and Jiang Zhengjie, Xiquan Chinese Hse., Beijing, 150 p., 2008.
- Neutrality and Multi-Valued Logics, A R Press, Rehoboth, 119 p., 2007; (with Andrew Schumann).
- Neutrosophy in Arabic Philosophy [English version], Renaissance High Press (Ann Arbor), 291 pp., 2007 (with Salah Osman); Translated into Arabic language by Dr. Osman Salah, 418 pp., Munsha't al-Ma'arif Publ. Hse., Jalal Huzie & Partners, Alexandria, Egypt, 2007.
- Multi-Valued Logic, Neutrosophy, and Schrödinger Equation, 107 p., Hexis, 2006 (with V. Christianto).
- Some Neutrosophic Algebraic Structures and Neutrosophic N-Algebraic Structures, 219 p., Hexis, 2006 (with W. B. Vasantha Kandasamy).
- Neutrosophic Rings, 154 p., Hexis, 2006 (with W. B. Vasantha Kandasamy).
- Vedic Mathematics, 'Vedic' or 'Mathematics': A Fuzzy & Neutrosophic Analysis, Automaton, Los Angeles, 220 p., 2006 (with W. B. Vasantha Kandasamy).
- Neutrosophic Methods in General Relativity, 78 p., Hexis, 2005 (with D. Rabounski, L. Borissova). Russian translation by D. Rabounski, Нейтрософские методы в Общей Теории Относительности, Hexis, 105 p., 2006.
- Interval Neutrosophic Sets and Logic: Theory and Applications in Computing, Hexis, 87 p., 2005 (with H. Wang, Y.-Q. Zhang, R. Sunderraman).
- Fuzzy and Neutrosophic Analysis of Women with HIV / AIDS (With Specific Reference to Rural Tamil Nadu in India),

- Hexis, 316 p., 2005; (with by W. B. Vasantha Kandasamy; translation of the Tamil interviews by Meena Kandasamy).
- Applications of Bimatrices to some Fuzzy and Neutrosophic Models, Hexis, 273 pp., 2005 (with W. B. Vasantha Kandasamy, K. Ilanthenral).
- Analysis of Social Aspect of Migrant Labourers Living with HIV/AIDS Using Fuzzy Theory and Neutrosophic Cognitive Maps / With specific reference to Rural Tamilnadu in India, Xiquan, Phoenix, 471 p., 2004 (with W. B. Vasantha Kandasamy).
- Basic Neutrosophic Algebraic Structures and their Applications to Fuzzy and Neutrosophic Models, Hexis, 149 pp., 2004 (with W. B. Vasantha Kandasamy).
- Fuzzy Cognitive Maps and Neutrosophic Cognitive Maps, Xiquan, Phoenix, 211 p., 2003 (with W. B. Vasantha Kandasamy).
- Proceedings of the First International Conference on Neutrosophy, Neutrosophic Logic, Neutrosophic Set, Neutrosophic Probability and Statistics, editor, University of New Mexico, Xiquan, Phoenix, 147 pp., 2002.
- Neutrosophy. / Neutrosophic Probability, Set, and Logic, American Research Press, Rehoboth, USA, 105 p., 1998; Republished in 2000, 2003, 2005, as "A Unifying Field in Logics: Neutrosophic Logic. Neutrosophy, Neutrosophic Set, Neutrosophic Probability and Statistics" (second, third, and respectively fourth edition), American Research Press, 155 p.; Republished in 2006 (fifth edition), InfoLearnQuest, Ann Arbor, MI, 155 p.; Chinese translation by F. Liu, "A Unifying Field in Logics: Neutrosophic Logic. / Neutrosophy, Neutrosophic Set, Neutrosophic Probability and statistics", Xiquan Chinese Branch, 121 p., 2003; Russian partial translation by D. Rabounski: Hexis, *Сущность нейтрософии*, 32 p., 2006.

Edited Books

- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Vol. 1, 70 p., 2013.

- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Vol. 2, 110 p., 2014.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Vol. 3, 76 p., 2014.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Vol. 4, 74 p., 2014.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Vol. 5, 76 p., 2014.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Vol. 6, 83 p., 2014.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Educational Publisher, Columbus, Vol. 7, 88 p., 2015.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Educational Publisher, Columbus, Vol. 8, 68 p., 2015.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Educational Publisher, Columbus, Vol. 9, 96 p., 2015.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Educational Publisher, Columbus, Vol. 10, 107 p., 2015.
- Neutrosophic Sets and Systems, book series, editors Florentin Smarandache & Mumtaz Ali, Educational Publisher, Columbus, Vol. 11, 118 p., 2016.

Dr.

Le Hoang Son

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Profile

PhD degree on Computer Science at VNU University of Science, Vietnam National University (VNU). Working as a researcher and now Vice Director of the Center for High Performance Computing, VNU University of Science, Vietnam National University since 2007. Member of International Association of Computer Science and Information Technology (IACSIT), of Center for Applied Research in e-Health (eCARE), of Vietnam Society for Applications of Mathematics (Vietsam), and also an associate editor of the International Journal of Engineering and Technology (IJET). Served as a reviewer for various international journals and conferences such as PACIS 2010, ICMET 2011, ICCTD 2011, KSE 2013, BAFI 2014, NICS 2014 & 2015, ACIIDS 2015 & 2016, ICNSC15, GIS-2015, FAIR 2015, *International Journal of Computer and Electrical Engineering*, *Imaging Science Journal*, *International Journal of Intelligent Systems Technologies and Applications*, *IEEE Transactions on Fuzzy Systems*, *Expert Systems with Applications*, *International Journal of Electrical Power and Energy Systems*, *Neural Computing and Applications*, *International Journal of Fuzzy System Applications*, *Intelligent Data Analysis*, *Computer Methods and Programs in Biomedicine*, *World Journal of Modeling and Simulation*, *Knowledge-Based Systems*, *Engineering Applications of Artificial Intelligence*. Invited talks at many conferences such as 2015 National Fundamental and Applied IT Research (FAIR 15'), 2015 National conference of Vietnam Society for Applications of Mathematics (VietSam15'), 2015 Conference on Developing Applications in Virtual Reality, GIS and Mobile technologies, and International Conference on Mathematical Education Vietnam 2015 (ICME Vietnam 2015), 2016 3rd National Foundation for Science and

Technology Development Conference on Information and Computer Science (NICS 16'), and 2016 HUST Conference on Applied Mathematics and Informatics (SAMI 16'). Published 64 papers in prestigious journals and conferences including 27 SCI/SCIE papers and undertaken more than 20 major joint international and national research projects. He has published 2 books on mobile and GIS applications. So far, he has awarded "2014 VNU Research Award for Young Scientists", "2015 VNU Annual Research Award" and "2015 Vietnamese Mathematical Award".

Research Interests

soft computing; fuzzy clustering; recommender systems; geographic information systems; particle swarm optimization.

List of Publications in Neutrosophics

Mumtaz Ali, Nguyen Van Minh, Le Hoang Son. A Neutrosophic Recommender System for Medical Diagnosis Based on Algebraic Neutrosophic Measures.
<http://arxiv.org/abs/1602.08447>

Mirela Teodorescu

Affiliation

Gheorghe Asachi Technical University of Iasi
Department of Textile Technology and Design
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List of Publications in Neutrosophics

Jozef Novak-Marcincin, Adrian Nicolescu, Mirela Teodorescu.
Routes for a Strong Communicational Ontology, *International Letters of Social and Humanistic Sciences* 1(2) (2015) 140-145

Adrian Nicolescu, Mirela Teodorescu. A Unifying Field in Logics.
Book Review, *International Letters of Social and Humanistic Sciences* 2(1) (2015) 48-59. ISSN 2300 – 2697

Jozef Novak-Marcincin, Daniela Gîfu, Mirela Teodorescu.
Florentin Smarandache: Law of included Multiple-Middle.
Book Review, *International Letters of Social and Humanistic Sciences* 29 (2014) 29-34. ISSN 2300 - 2697

Jozef Novak-Marcincin, Adrian Nicolescu, Mirela Teodorescu.
Neutrosophic circuits of communication. A review,
International Letters of Social and Humanistic Sciences 2(2) (2015) 174-186. ISSN 2300 – 2697

Mihaela-Gabriela Păun, Mirela Teodorescu. Hermeneutics can make beauty and ugly as neutral (as neutrosophic), *Social Sciences and Education Research Review* 2 52-61 (2014)

Mirela Teodorescu, Dan Ionescu. Florentin Smarandache & Ștefan Vlăduțescu: Neutrosophic emergences and incidences in communication and information – Book review - *International Letters of Social and Humanistic Sciences* 27 (2014) 94-99 . ISSN 2300 – 2697

Florentin Smarandache, Daniela Gifu, Mirela Teodorescu.
Neutrosophic elements in discourse. *Social Scientific and Education Research Review* (2) 1 (2015) 25-32. ISSN 2392 - 9683

Daniela Gifu, Mirela Teodorescu. Pragmatical Solving of Uncertainties on Production Flow, *The Global Electrical Engineers*, 2015 (2) 1-9

Elena Rodica Opran, Dan Valeriu Voinea, Mirela Teodorescu. Art and Being in Neutrosophic Communication. *International Letters of Social and Humanistic Journal*, 6(1), (2015) 16 -27. ISSN 2300 – 2697

Chapters in Books

Florentin Smarandache, Ștefan Vlăduțescu, Mirela Teodorescu. Communication of Uncertainties in Neutrosophy. Chapter in book: Ștefan Vlăduțescu, Florentin Smarandache, Alina Țenescu, Daniela Gifu: *Topical Communication Uncertainties*, Editura SITECH, Craiova 2014

Mirela Teodorescu. Inexpugnable logics, the possible of impossible, a life story! Chapter in book: Ștefan Vlăduțescu, Dan Valeriu Voinea, Elena Rodica Opran (coordinators): *Neutrosophy, Paradoxism and Communication*, Editura SITECH, Craiova, 2014

Jozef Novak-Marcincin, Adrian Nicolescu, Mirela Teodorescu. Neutrosophic Thought Routes. Chapter in book: Ștefan Vlăduțescu, Dan Valeriu Voinea, Elena Rodica Opran (coordinators): *Neutrosophy, Paradoxism and Communication*, Editura SITECH, Craiova, 2014

Adrian Nicolescu, Mirela Teodorescu. Logics and Neutrosophy. Chapter in book: Ștefan Vlăduțescu, Dan Valeriu Voinea, Elena Rodica Opran (coordinators): *Neutrosophy, Paradoxism and Communication*, Editura SITECH, Craiova, 2014

Daniela Gifu, Mirela Teodorescu. Neutrosophy, a possible Method of Process Analysis Uncertainties Solving. Chapter in book: Florentin Smarandache, Bianca Teodorescu, Mirela Teodorescu *Uncertainty Communication Solution in Neutrosophy Key*, Europa Nova, Bruxelles, Belgium

Mirela Teodorescu, Bianca Teodorescu. Between True and False, Scientific Uncertainty, Neutrosophy by Argumentation. Chapter in book: F. Smarandache, B. Teodorescu, M.

Teodorescu: Uncertainty Communication Solution in
Neutrosophy Key, Europa Nova, Bruxelles, Belgium

Conference Paper

Mirela Teodorescu, Daniela Gîfu, Florentin Smarandache.
Maintenance Operating System Uncertainties Approached
through Neutrosophic Theory, Conference FUZZ-IEEE
2016

Prof. Dr.

Luige Vlădăreanu Sr.

Scientific Researcher of the Romanian Academy

Affiliation

Institute of Solid Mechanics
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Bucharest, ROMANIA



Profile

PhD in Electronics field from the Institute of Solid Mechanics of Romanian Academy, in 1998. From 2003, Ministry of Education and Research, executive Department for Financing Superior Education and of Scientific University Research - High Level Expert Consulting for MEC/CNCSIS project, from 2003-2005, member of Engineering Science Committee of Romanian National Research Council, from 2005, Scientific Researcher Gr.I (Professor) of Romanian Academy, from 2009 Head of Robotics and Mechatronics Department of Institute of Solid Mechanics, Romanian Academy.

His scientific work is focused on real time control in solid mechanics applied in robot trajectory control, hybrid position – force control, multi-microprocessor systems for robot control, acquisition and processing of experimental physical data, experimental methods and signal processing, nano-micro manipulators, semi-active control of mechanical system vibrations, semi-active control of magnetorheological dissipaters systems, complex industrial automations with programmable logical controllers in distributed and decentralized structure.

He has published over 35 books and book chapters, 11 edited books, over 200 papers in journals, proceedings and conferences in the areas. Director and coordinator of over 15 grants of international and national research – development programs in the last 5 years, 15 invention patents, developing 17 advanced work methods resulting from applicative research activities and more than 60 research projects. He is the author of the virtual projection method known as Vladareanu-Munteanu method, of the Robot Neutrosophic Control RNC method known as Vladareanu-Smarandache method, and the method of the Extended (Extenics) Hybrid

Force-Position Control eHFPC of robots applied as Vladareanu-Smarandache-Sandru method. He is the winner of the two Prize and Gold of Excellence in Research 2000, SIR 2000, of the Romanian Government and the Agency for Science, Technology and Innovation. 9 International Invention and Innovation Competition Awards and Gold of World's Exhibition of Inventions, Geneva 2007 - 2009, and other 9 International Invention Awards and Gold of the Brussels, Zagreb, Bucharest International Exhibition. He received "Traian Vuia" (2006) award of the Romanian Academy, Romania's highest scientific research forum, for a group of scientific papers published in the real time control in the solid mechanics. He is a Corresponding Member of the American Romanian Academy and he is a member of the International Institute of Acoustics and Vibration (IIAV), Auburn University, USA (2006), ABI's Research Board of Advisors, American Biographical Institute (2006), World Scientific and Engineering Academy Society, WSEAS (2005), International Association for Modelling and Simulation Techniques in Enterprises - AMSE, France (2004), National Research Council from Romania (2003-2005), etc. He is a PhD advisor in the field of mechanical engineering at the Romanian Academy. He was an organizer of several international conferences such as the General Chair of four WSEAS International Conferences, chaired Plenary Lectures to Houston 2009, Harvard, Boston 2010 and Penang, Malaysia 2010, Paris 2011, Florence 2014, Tenerife 2015 to the WSEAS International Conferences, and he is team leader of WSEAS scientific research project: Mechanics & Robotics Systems, also serving on various other conferences and academic societies.

Nominations

- Nominated in Hubert Who is Who 2007, Encyclopedia of personalities from Romania, pg. 1226-1227, Verlag fur Personenzyklopadien AG, Schweiz, 2007-2010
- Nominated in "Who's Who in Science and Engineering" edition 2006-2011
- Nominated in "Man of the Year 2006" by Governing Board of Editors of the American Biographical Institute, 2006
- Nominated in "High Level Expert WG5 ROST 2007-2013"
- National Expert of the Board of Scientific Research in Higher Education (CNCSIS); Evaluator of over 150 projects in the national

program CNCSIS 2006, excellence program, PN II IDEI and PN II UMANE Resources, 2005-2008

- National Expert of the Board of Scientific Research in Higher Education (CNMP), Program IV Partnership in priority fields, 207.

Invited Professor

- Invited Professor at the Shanghai Jiao Tong University, School of Mechanical Engineering, with the lecture: Walking Robots Dynamical Stability Control, August 2011, 2013, 2016
- Visiting Professor at Jiliang University, Hangzhou, China, with the lecture: Dynamical Stability Control Strategy for the RABOT Compliant Walking Robot, January 2014
- Invited Professor at Shenyang Institute of Automation, Chinese Academy of Sciences, with the lecture "Real Time Control in Solid Mechanics", December 2010 and Institute Automation of the Chinese Academy of Science, Beijing 2013-2016, FP7 RABOT Project
- Invited professor at Universidad Autónoma Metropolitana-Azcapotzalco, Mexico City with the lecture (mini-course) Applied Control Theory, April 2009

List of Publications in Neutrosophics

Luige Vladareanu, Ionel Alexandru Gal, Hongnian Yu, Mingcong Deng. Robot control intelligent interfaces using the DSMT and the neutrosophic logic, International Journal of Advanced Mechatronic Systems, Vol.6, Nr.2-3, pp.128-135, Inderscience Publishers (IEL), 2015, Online ISSN: 1756-8420, DOI: 10.1504/IJAMECHS.2015.070710.

L. Vladareanu, C. Spîrleanu, M. Iliescu, H. Yu, M. Deng, W. Guo, F. Gao. Versatile intelligent portable robot platform for flexible robotic cells with AGV, 2015 International Conference on Advanced Mechatronic Systems (ICAMechS 2015), Beijing, China, 22-24 August 2015, pp. 42-49, ISBN 978-1-4673-7997-7, IEEE conference publication.

Vladareanu, L, Ionel Alexandru Gal, Hongnian Yu, Mincong Deng. "Improvement of the walking robot dynamic stability using the DSMT and the neutrosophic logic," in

Advanced Mechatronic Systems (ICAMechS), 2014 International Conference, pp.43-48, 10-12 Aug. 2014, doi: 10.1109/ICAMechS.2014.6911621.

- Smarandache F., Vladareanu L. Applications of Neutrosophic Logic to Robotics - An Introduction, The 2011 IEEE International Conference on Granular Computing Kaohsiung, Taiwan, Nov. 8-10, 2011, p 607-612, ISBN 978-1-4577-0370-6
- L. Vladareanu, L. Căpitanu. The versatile intelligent portable robot platform for the simulation and testing of the prostheses hip implants, 21st Congress of the European Society of Biomechanics ESB 2015, poster, Prague, Czech Republic, 5-8 July 2015.
- L. Vladareanu. Advanced control techniques using virtual, intelligent and mobile robots research environment, 14th International Conference on Artificial Intelligence, Knowledge Engineering and Data Bases, AIKED'15, Tenerife, Spain, 10-12 January 2015, <http://www.wseas.org/cms.action?id=8621> , (Plenary Lecture).
- L. Vladareanu. Versatile Intelligent Portable Rescue Robot Platform through the Adaptive Networked Control, Proceedings of 5th European Conference of MECHANICAL ENGINEERING, 5th European Conference of MECHANICAL ENGINEERING, Florence, Italy, 22-24 11.2014, ISSN 2227 - 4596, <http://naun.org/cms.action?id=8018>, (Plenary Lecture).
- L. Vladareanu. Haptic Robots Stability on Uneven Terrain and Uncertain Environment, 7th International Conference on Theoretical and Applied Mechanics, TAM '16, Jakarta, Indonesia May 7-9, 2016, <http://naun.org/cms.action?id=11662>, (Plenary Lecture).
- Mumtaz Ali, M. Shabir, F. Smarandache, L. Vlădăreanu. Neutrosophic LA-Semigroup Rings, Neutrosophic Sets and Systems, An International Journal in Information Science and Engineering, vol. 7, pp. 81-88, 2015, p-ISSN 2331-6055, e-ISSN 2331-608X.

- V. Vladareanu, I. Dumitrache, L. Vladareanu, I. Șt. Sacala, G. Tonț, M.A. Moiescu. Versatile intelligent portable robot platform applied to dynamic control of the walking robots, *Studies in Informatics and Control*, vol. 24(4), pp. 409-418, 2015, ISSN 1220-1766, IF (2014/2015) 0.913.
- V. Vladareanu, R.I. Munteanu, A. Mumtaz, F. Smarandache, L. Vladareanu. The optimization of intelligent control interfaces using Versatile Intelligent Portable Robot Platform, *Procedia Computer Science*, vol. 65, pp. 225-232, 2015, ISSN 1877-0509, revistă editată de Elsevier (International Conference on Communication, Management and Information Technology ICCMIT 2015, Prague, Czech Republic, 20-22 April 2015).
- V. Vladareanu, Tonț G., Vladareanu L., Smarandache F. The Navigation of Mobile Robots în Non-Stationary and Non-Structured Environments, *Int. Journal of Advance Mechatronic Systems* 01/2013; 5(4):232- 243. DOI: 10.1504/IJAMECHS. 2013. 057663, ISSN online: 1756-8420, ISSN print: 1756-8412
- V. Vladareanu, C. Boșcoianu, R.I. Munteanu, H. Yu, L. Vladareanu. Dynamic Control of a Walking Robot Using the Versatile Intelligent Portable Robot Platform, 20th International Conference on Control Systems and Computer Science (CSCS20-2015), Bucharest, 27-29 May 2015, pp. 38-45, ISBN 978-1-4799-1779-2, DOI: 10.1109/CSCS.2015.48, IEEE conference publication
- Ionel Alexandru Gal, Luige Vladareanu, Florentin Smarandache, Hongnian Yu, Mingcong Deng. „Neutrosophic Logic Approaches Applied to Robot Real Time Control”, International Conference on Aerospace, Robotics, Biomechanics, Neurorehabilitation, Human motricities, Mechanical Engineering and Manufacturing Systems ICMERA 2013, 24-27 Octombrie, invited paper
- Ionel Alexandru Gal, Luige Vladareanu, Hongnian Yu. Applications of Neutrosophic Logic Approaches in RABOT Real Time Control, SISOM 2013 and Session of the Commission of Acoustics, Romanian Academy, ISSN:1843-5459, Editura Media Mira, Bucharest 25-26 May 2013

Ionel Alexandru Gal, Luige Vladareanu, Smarandache F., Yu, H., Deng, M. (2013). Neutrosophic Logic Approaches Applied to RABOT Real Time Control. Neutrosophic Theory and Its Applications. Collected Papers, Vol. 1, pp.55-60, ISBN: 978-1-59973-320-3

Octavian Melinte, Luige Vladareanu, Florentin Smarandache, Radu Adrian Munteanu, Mumtaz Ali, Hongbo Wang. The NAO robot integration in the virtual platform VIPRO, The Annual Symposium of the Institute of Solid Mechanics, May 2015

Patents using Neutrosophic Sets and Systems

Luige Vladareanu, Radu I. Munteanu, Shuang Cang, Hongnian Yu, Hongbo Wang, Victor Vladareanu, Zeng-Guang Hou, Octavian Melinte, Xiaojie Wang, Guibin Bian, Yongfei I. Feng. "Haptic interfaces for the rescue walking robots motion in the disaster areas", patent OSIM A2014 00577 of 29/07/2014

Luige Vladareanu, Radu I. Munteanu, Tudor Sireteanu, Eugen Albu, Victor Vladareanu, Radu A. Munteanu, Boris S. Cononovici, Mihaiela Iliescu, Octavian Melinte, Ionel A. Gal, Daniel M. Mitroi, Oana Chenaru. "Method and device for the development in virtual reality of interfaces for mechatronic systems' control" patent OSIM A2016 00174 of 10/03/2016

Projects applying Neutrosophic Sets and Systems

Partnerships Program in priority fields PN-II-PT-PCCA-2013-4, ID2009, „Versatile Intelligent Portable Robot Platform using Adaptive Networked Control Systems of Rescue Robots”,VIPRO project no. 009/2014, project coordinator Prof. Luige Vladareanu, Romanian Academy, Institute of Solid Mechanics

Partnerships Program in priority fields PN-II-PT-PCCA-2013-4, ID1349, „Air multiagent system with the mobile earth station for information management”, MASIM, project no. 255/2014, the project partner Romanian Academy, Institute of Solid Mechanics, the partner coordinator Victor Vladareanu

Supervised PhD Thesis

- Ionel Alexandru Gal (2013). Contributions to the Development of Hybrid Force-Position Control Strategies Applied on Mobile Robots, PhD Thesis, Coordinators: Prof. L. Vladareanu and Prof. F. Smarandache
- Octavian Melinte (2014). Theoretical And Experimental Research On The Control Of Position Mechanical Systems With High Precision, PhD Thesis, Coordinators: Prof. L. Vladareanu and Prof. F. Smarandache
- Stefan Dumitru (2014). Contributions to the development of neural networks motion control systems for mobile autonomous robots, PhD Thesis, Coordinator: Prof. L. Vladareanu
- Bucur Dan (2014). Contributions to prehension systems for robots and intelligent humanoid hands motion control, PhD Thesis, Coordinator: Prof. L. Vladareanu

Prof. Dr.

Ștefan Vlăduțescu

Affiliation

University of Craiova
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Profile

Professor of Communication, Information and Journalism at the University of Craiova. Graduated the Faculty of Philology, University of Craiova, as valedictorian, with special “Diploma of merit”. Also, graduated the Faculty of Law, University of Bucharest. Obtained his doctorate in Philosophy from University of Bucharest. Member of: International Association of Communication (ICA), Romanian Writer’s Union, Romanian Association of History of Press; board of *Polish Journal of Management Studies*; director of *Social Sciences and Education Research Review*; member of editorial board of *European Scientific Journal*, of *Neutrosophic Sets and Systems*, and of *Annals of University of Craiova*.

Author or co-author of 14 professional books, of 110 scientific papers, in Romania and international journals (including ISI/Thompson Reuters articles), and in Proceedings of international seminars and conferences.

Research Interests

communication, neutrosophy.

List of Publications in Neutrosophics

Smarandache, F., & Vlăduțescu, Ș. (2014). *Communication Neutrosophic Routes*. Columbus, OH: Educational Publishing

Smarandache, F., & Vlăduțescu, Ș. (2013). *Communication vs. Information, an Axiomatic Neutrosophic Solution*. *Neutrosophic Sets and Systems*, 1, 38-45

- Smarandache, F., & Vlăduțescu, Ș. (2014). Communication and neutrosophic reinterpretation. *Neutrosophy, Paradoxism and Communication*, 23
- Smarandache, F., & Vladutescu, S. (2014). Communicative Universal Convertibility Matter-Energy-Information. *Social Sciences and Education Research Review*, 1(1), 44-62
- Smarandache, F., Vlăduțescu, Ș., & Teodorescu, M. (2014). Communication of uncertainties in Neutrosophy. *Topical Communication Uncertainties*, 9
- Smarandache, F., & Vlăduțescu, Ș. (2014). *Neutrosophic Emergences and Incidences in Communication and Information*. Saarbrücken: LAP Lambert Academic Publishing
- Ștefan Vlăduțescu, Florentin Smarandache, Daniela Gîfu, Alina Țenescu (2014). *Topical Communication Uncertainties*. Craiova/Columbus: Sitech/Zip Publishing

Prof. Dr. Sc.

Edmundas Kazimieras Zavadskas

Member of the Lithuanian Academy of Sciences / LITHUANIA



Profile

Born in Vilnius, Lithuania, in 1944. Doctoral degree in technical sciences (PhD), in 1973, and Doctor of Sciences from Moscow Institute of Civil Engineering, in 1987. Professor (since 1989) at Vilnius Institute of Civil Engineering. Dr. habil (since 1993). Rector of Vilnius Civil Engineering Institute (VISI) in 1990. Expert Member (1991–1993), Corresponding Member (1993–2011) and in 2011, became a Full Member of the Lithuanian Academy of Sciences.

During the period between February-October 1990, he successfully reorganized the Institute, which became the Vilnius Technical University, and was nominated a Rector for period of 1990–1996. Later the University was renamed as Vilnius Gediminas Technical University (VGTU) and Prof. E. K. Zavadskas became a Rector for the period of 1996–2002. In 2002–2011, he was Vice rector of VGTU. In this time, he worked towards making the University one of the largest universities in Lithuania, taking a leading position in technical and engineering education and research. Since 1986 till now Professor Zavadskas has been a Head of the Department of Construction Technology and Management, Civil Engineering Faculty (VGTU). Since 2011 till 2014 he was a principal research of Research Institute of Internet and Intelligent Technologies. Since 2014 till now he is a principal researcher of Research Institute of Smart Building Technologies. Furthermore, 2001–2003 he has been granted a title of Honorary Doctor of three universities: Poznań (at Poznan Technological University, Poland), Kiev (at National Aviation University, Ukraine), and St. Petersburg (at Herzen University, Russia). Since 2012 he has been granted a title of the Honorary International Professor of the National Taipei University of Technology, Taiwan.

Published over 50 books, including 5 textbooks and 16 monographs as single author, or in collaboration with other authors, 10 popular science books, over 450 research articles as well as several hundreds of articles on various social and cultural topics. He has edited over 20 collective volumes. Around 10 of his papers are classed as highly cited in the Thomson Reuters database as well as being in the top 1% of the most cited papers in its field (Engineering). His h-index is 43 according to the Web of Science with more than 5.600 citations received and 58 according to Google Scholar with more than 11.000 citations received. Also he is ranked in the top 1% of the Most Cited Scientists in Engineering according to the Essential Science Indicators of Thomson. He has been identified in the list of Highly Cited Researchers published in 2014 by Shangai Center and Thomson Reuters in the categories of Engineering, therefore, being considered one of the world's most influential scientific researchers.

Founded three famous international scientific journals: *Technological and Economic Development of Economy* (Editor-in-chief since 1994), *Journal of Civil Engineering and Management* (Editor-in-chief since 1995) and *International Journal of Strategic Property Management* (Editor-in-chief from 1997 till 2011). Since 2008, all three journals have been referred in Thomson Reuters Web of Science database, and since 2010 – have impact factor (IF). Since 2010 some of these journals are published by VGTU publishing house „Technika“ in collaboration with a famous publishing house – Taylor & Francis.

Member of Editorial Advisory Board International of *International Journal of Information Technology and Decision Making*, *the Journal of Grey Systems*. Member of Editorial Board of *Automation in Construction*, *Baltic Journal of Road and Bridge Engineering*, *Journal of Business Economics and Management*, *Studies in Informatics and Control*, *Informatica*, *Economic Computation and Economic Cybernetics*, *Studies and Research*, *Archives of Civil and Mechanical Engineering*, *Panoeconomicus*, *Engineering Economics*, *Informatics in Education*, *Economics & Sociology*.

Research Interests

construction materials; materials resistance; construction technology and management; life cycle analysis; civil engineering; operational research methods; decision support systems; group decision making; multi-criteria decision making; automation in design.

List of Publications in Neutrosophics

- Baušys, R.; Zavadskas, E. K. (2015). Multicriteria decision making approach by VIKOR under interval neutrosophic set environment. *Economic computation and economic cybernetics studies and research (ECECSR)* 49(4): 33-48.
- Baušys, R.; Zavadskas, E. K.; Kaklauskas, A. (2015). Application of neutrosophic set to multicriteria decision making by COPRAS. *Economic computation and economic cybernetics studies and research (ECECSR)* 49(2): 91-106.
- Zavadskas, E. K.; Baušys, R.; Lazauskas, M. (2015). Sustainable assessment of alternative sites for the construction of a waste incineration plant by applying WASPAS method with single-valued neutrosophic set. *Sustainability* 7(12): 15923-15936.

Dr.

Hai-Long Yang

Associate Professor

Affiliation

College of Mathematics and Information Science
Shaanxi Normal University
No. 620, West Chang'an Avenue, Chang'an District,
Xi'an, Shaanxi Province, 710119 / P.R. CHINA



Profile

Born December, 4th, 1977. BA from Shaanxi Normal University (2001). Master degree from Shaanxi Normal University (2010). Since 2012, post-doctoral studies at Xi'an Jiaotong University. Between August 2014–August 2015, visiting scholar in University of Regina, Canada. Associate Professor at School of Mathematics and Information Science, Shaanxi Normal University. In charge of National Natural Science Foundation of China: “The study of multi-attribute decision methods based on multigranulation rough sets”, 2015.01.01-2018.12.31. 700 thousand RMB.

Neutrosophic Research

Working topic in neutrosophics: combination of neutrosophic sets and rough sets.

Research Interests

mathematical analysis; topology; probability; statistics; linear algebra; advanced mathematics; rough set theory and method; fuzzy mathematics.

List of Publications

Neutrosophic Sets

Yang Hai-Long, Guo Zhi-Lian, She Yanhong, Liao Xiuwu. On single valued neutrosophic relations, *Journal of Intelligent & Fuzzy Systems*, 2016, 30(2):1045-1056

Yang Hai-Long, Zhang Chun-Ling, Guo Zhi-Lian, Liu Yan-Ling Liu, Liao Xiuwu. A hybrid model of single valued

neutrosophic sets and rough sets: single valued neutrosophic rough set model, *Soft Comput* 2016, DOI 10.1007/s00500-016-2356-y

Rough Set Theory; (Fuzzy) Graphs; Decision Making Analysis

Lu You, Song Weijie, Yang Hai-Long. Trees with 2-reinforcement number three. *Bulletin of the Malaysian Mathematical Sciences Society*, 2016, 39(2): 821-838

Yang Hai-Long, Guo Zhi-Lian. Multigranulation decision-theoretic rough sets in incomplete information systems. *International Journal of Machine Learning & Cybernetics*, 2015, (6): 1005-1018

She Yanhong, Li Jinhai, Yang Hailong. A local approach to rule induction in multi-scale decision tables. *Knowledge-Based Systems*, 2015, 89: 398-410

Yang Hai-Long, Liao Xiuwu, Li Sheng-Gang. On soft continuous mappings and soft connectedness of soft topological spaces. *Hacetetepe Journal of Mathematics and Statistics*, 2015, 44(2): 385-398.

Guo Zhi-Lian, Yang Hai-Long, Wang Jue. Rough set over Dual-universes in intuitionistic fuzzy approximation space and its application. *Journal of Intelligent & Fuzzy Systems*, 2015, 28(1): 169-178

Yang Hai-Long, Liao Xiuwu, Wang Shouyang, Wang Jue. Fuzzy probabilistic rough set model on two universes and its applications. *International Journal of Approximate Reasoning*, 2013, 54: 1410-1420

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Yang Hai-Long, Li Sheng-Gang, Guo Zhi-Lian, Ma Chun-Hui. Transformation of bipolar fuzzy rough set model. *Knowledge-Based Systems*, 2012, 27: 60-68

- Yang Hai-Long. A note on "Rough set theory based on two universal sets and its applications". *Knowledge-Based Systems*, 2011, 24(3): 465-466
- Yang Hai-Long, Guo Zhi-Lian. Kernels and closures of soft set relations, and soft set relation mappings. *Computers & Mathematics with Applications*, 2011, 61(3): 651-662

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Profile

MSc in Automation and Robotics from the Technical University of Koszalin, Poland in 1997. From Feb. 2012 to Aug. 2012, visiting scholar in the School of Engineering of Southern Polytechnic State University in USA. Currently, professor in the Department of Electrical and Information Engineering, Shaoxing University, P.R. China. More than 30 years of experience in teaching and research. Published more than 160 papers in journals, written few books related to his research work, and finished a few projects sponsored by the government of P.R. China. Member in the editorial boards of “Neutrosophic Sets and Systems”, “Journal of New Theory” (Area Editor), “The Open Automation and Control Systems Journal”, and “International Journal of Engineering, Science and Technology”. In 2009 and 2015, was awarded Outstanding Reviewer for “Applied Soft Computing Journal”.

Neutrosophic Research

Published more than 40 papers in neutrosophic theory and applications . Currently, he develops a project of neutrosophic theory, decision making and applications sponsored by the National Natural Science Foundation of P.R. China (No. 71471172).

Research interests

soft computing; multicriteria decision making; intelligent control; robotics; pattern recognitions; fault diagnosis; rock mechanics.

List of Publications in Neutrosophics

- Jun Ye. Single-valued neutrosophic clustering algorithms based on similarity measures, *Journal of Classification*, 2016, DOI: 10.1007/s00357
- Jun Ye. Some weighted aggregation operators of trapezoidal neutrosophic numbers and their multiple attribute decision making method, *INFORMATICA*, 2016, in press
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- Jun Ye. Single valued neutrosophic similarity measures based on cotangent function and their application in the fault diagnosis of steam turbine, *Soft Computing*, 2015, DOI: 10.1007/s00500-015-1818-y
- Jun Ye. Bidirectional projection method for multiple attribute group decision making with neutrosophic numbers, *Neural Computing and Applications*, 2015, DOI: 10.1007/s00521-015-2123-5
- Jun Ye. Simplified neutrosophic harmonic averaging projection-based method for multiple attribute decision making problems, *International Journal of Machine Learning and Cybernetics*, 2015, DOI: 10.1007/s13042-015-0456-0
- Jun Ye. Multiple attribute group decision making based on interval neutrosophic uncertain linguistic variables, *International Journal of Machine Learning and Cybernetics*, 2015, DOI: 10.1007/s13042-015-0382-1
- Jun Ye. Exponential operations and aggregation operators of interval neutrosophic sets and their decision making methods, *SpringerPlus*, 2016, 5: 1488, p. 18. DOI: 10.1186/s40064-016-3143-z
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- Jun Ye, Florentin Smarandache. Similarity measure of refined single-valued neutrosophic sets and its multicriteria decision making method, *Neutrosophic Sets and Systems*, 2016, 12: 41-44
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- Jun Ye, Jing Fu. Multi-period medical diagnosis method using a single valued neutrosophic similarity measure based on tangent function, *Computer Methods and Programs in Biomedicine*, 2016, 123: 142-149
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- Lingwei Kong, Yuefeng Wu, Jun Ye. Misfire fault diagnosis method of gasoline engines using the cosine similarity measure of neutrosophic numbers, *Neutrosophic Sets and Systems*, 2015, 8: 43-46
- Yanhui Guo, Abdulkadir Sengur, Jun Ye. A novel image thresholding algorithm based on neutrosophic similarity score, *Measurement*, 2014, 58, 175-186 (SCI)
- Shan Ye, Jun Ye. Dice similarity measure between single valued neutrosophic multisets and its application in medical diagnosis, *Neutrosophic Sets and Systems*, 2014, 6: 49-54
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This is the first volume of the *Encyclopedia of Neutrosophic Researchers*, edited from materials offered by the authors who responded to the editor's invitation.

The authors are listed alphabetically.

The introduction contains a *short history of neutrosophics*, together with *links* to the main papers and books.

Neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics, neutrosophic measure, neutrosophic precalculus, neutrosophic calculus and so on are gaining significant attention in solving many real life problems that involve uncertainty, impreciseness, vagueness, incompleteness, inconsistent, and indeterminacy.

In the past years the fields of neutrosophics have been extended and applied in various fields, such as: artificial intelligence, data mining, soft computing, decision making in incomplete / indeterminate / inconsistent information systems, image processing, computational modelling, robotics, medical diagnosis, biomedical engineering, investment problems, economic forecasting, social science, humanistic and practical achievements.

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