

2010 Annual Meeting of the North American Fuzzy Information Processing Society

(NAFIPS 2010)

**Toronto, Ontario, Canada
12 – 14 July 2010**



IEEE Catalog Number: CFP10750-PRT
ISBN: 978-1-4244-7859-0

General Session

<u>G-1</u>	Queries Mixing Positive and Negative Associations and their Weakening.....	1
	<i>Patrick Bosc and Olivier Pivert</i>	
<u>G-2</u>	The Fuzzy Reliable Hub Location Problem	07
	<i>Soheil Davari, Mohammad Hossein Fazel Zarandi and I. Burhan Turksen</i>	
<u>G-3</u>	On the Division of Bipolar Fuzzy Relations	13
	<i>Patrick Bosc and Olivier Pivert</i>	
<u>G-4</u>	A Data-Driven Genetic Neuro-Fuzzy System to PVT Properties Prediction	0.19
	<i>Amar Khoukhi and Saeed Alboukhitan</i>	
<u>G-6</u>	Aspects of object merging	0.....25
	<i>Antoon Bronselaer and Guy De Tre</i>	
<u>G-8</u>	Genetic algorithms for fuzzy multi-objective approach to portfolio selection	31
	<i>Ali Mohammad Kimiagari, Hamed Gharahgozli and Rezvan Nikkholt</i>	
<u>G-9</u>	Classification Using An Adaptive Fuzzy Network	39
	<i>Nick Pizzi, Aleksander Demko and Witold Pedrycz</i>	
<u>G-10</u>	Improvement of Bag of Visual Words using Iconclass	45
	<i>Naoki Motohashi, Kousuke Yamauchi and Tomohiro Takagi</i>	
<u>G-11</u>	Fuzzy Time Series Based on defining Interval Length with Imperialist Competitive Algorithm	50
	<i>Mohammad Hossein Fazel Zarandi, Ali Molladavoudi and Ahmad Hemmati</i>	
<u>G-12</u>	A Line of Sight Algorithm using Fuzzy Measures	57
	<i>Tanja Magoc, Ari Kassin and Rodrigo Romero</i>	
<u>G-13</u>	A Multi-Agent System for Detecting Adverse Drug Reactions	63
	<i>Ayman Mansour, Hao Ying, Peter Dews, Ji Yanqing, Richard E. Miller, R. Michael Massanari, John Yen and Margo Farber</i>	
<u>G-14</u>	Interpretation of Metaphor and the Principle of Conceptual Fuzzy Sets	69
	<i>Akimitsu Mori, Mayu Sato, Minoru Hamaguchi and Tomohiro Takagi</i>	
<u>G-15</u>	Clustering Uncertain Interval Data Using A New Hausdorff-Based Metric	72
	<i>M. H. Fazel Zarandi, Milad Avazbeigi, Mohammad Hassan Anssari and I. Burhan Turksen</i>	
<u>G-16</u>	Fuzzy Rough Sets based on Hybrid Monotonic Inclusion Measures and Similarity measures	77
	<i>Hongying Zhang, Minggao Dong, Jianjun Qi and Wenxiu Zhang</i>	
<u>G-18</u>		

Evolutionary Optimization of a Fuzzy Rule-Based Network Intrusion Detection System	82
<i>Terrence Fries</i>	
G-22 ALTERNATE WORLD INTERPRETAION OF NEW CISET OPERATORS	88
<i>Premchand Nair and Shih-Chuan Cheng</i>	
G-23 Knowledge Presentation According to the Linkage Intensity	92
<i>Shih-Chuan Cheng and Premchand Nair</i>	
G-24 Socio- psychological Variables as Antecedents to Consumer Ethnocentrism: A Fuzzy Logic Based Analysis Study	96
<i>Saeb Al Ganideh and El Refae Ghaleb</i>	
G-27 One-shot Training Algorithm for Self-Feedback Neural Networks	102
<i>Mahmood Amiri, Alireza Sadeghian and Sylvain Chartier</i>	
G-28 Towards a New Justification of the Tastle-Wierman (TW) Dissention and Consensus Measures (and Their Potential Role in Education)	108
<i>Karen Villaverde and Olga Kosheleva</i>	
G-29 Consistently handling geographical user data: Merging of coreferent POIs	115
<i>Guy De Tre and Antoon Bronselaer</i>	
G-30 Cloud Sets as a measure theoretic basis for fuzzy set theory	121
<i>Mark Wierman</i>	
G-31 Measurement theory and subsethood	126
<i>Mark Wierman and William Tastle</i>	
G-34 Assessing Probability and Possibility of Catastrophic Failure in Managed Systems Using Sparse Fuzzy Data	131
<i>Thomas Whalen</i>	
G-38 Improving Evolutionary Training for Sugeno Fuzzy Inference Systems Using a Mutable Rule Base	137
<i>Christopher Coy and Devinder Kaur</i>	
G-39 New Incremental Fuzzy C Medoids Clustering Algorithms	143
<i>Nicolas Labroche</i>	
G-40 Introducing Strong T-transitivity in Approximate Fuzzy Preorders and Equivalences.	149
<i>Dionis Boixader and J. Recasens</i>	
G-43 An Improved Genetic Algorithm for Robust Fuzzy Clustering with Unknown Number of Clusters	154
<i>Amit Banerjee</i>	
G-47 Fuzzy Hybrid Systems Modeling	160
<i>Xinyu Du, Hao Ying and Feng Lin</i>	
G-48	

Fuzzy Ontology for Natural Language	166
<i>Julia Taylor and Victor Raskin</i>	
G-49	
Image Segmentation Based On Fuzzy Flood Fill Mean Shift Algorithm	172
<i>Hoon Kang, Seung Hwan Lee and Jayong Lee</i>	
G-50	
Inherently Imprecise Causal Complexes	178
<i>Lawrence Mazlack</i>	
G-51	
Weaknesses Of DAGs For Imprecise General Causal Representations	184
<i>Lawrence Mazlack</i>	
G-53	
Nonlinear Ant System for Large Scale Search Spaces	190
<i>Pooia Lalbakhsh, Bahram Zaeri and Mehdi N. Fesharaki</i>	
G-54	
Fuzzy LDA for Face Recognition with GA Based Optimization	196
<i>Amar Khoukhi and Syed Feraz</i>	
G-55	
A Fuzzy Filter for Random Impulse Noise Removal From Video	202
<i>Tom Melange, Mike Nachtegael and Etienne Kerre</i>	
G-56	
Applying Nonlinear Learning Scheme on AntNet Routing Algorithm	208
<i>Pooia Lalbakhsh, Bahram Zaeri and Mehdi N. Fesharaki</i>	
G-58	
Operations on Type-2 Fuzzy Sets Based on the Set of Pseudo-Highest Intersection Points of Convex Fuzzy Sets	214
<i>Hooman Tahayori, Alireza Sadeghian and Andrea Visconti</i>	
G-61	
An Application of Fuzzy Number to Educational Evaluation Method	220
<i>Hsunhsun Chung and Takenobu Takizawa</i>	
G-62	
Fuzzy Ontologies Building Method: Fuzzy OntoMethodology	224
<i>Hanene Ghorbel, Afeef Bahri and Rafik Bouaziz</i>	
G-64	
Recommendations In Twitter Using Conceptual Fuzzy Sets	232
<i>Takatoshi Sakaguchi, Yuya Akaho, Tomohiro Takagi and Takuya Shintani</i>	
G-68	
A Model of Conscious Percept Formation using Fuzzy Entropy Measures of Neuronal Multiplex Signals	238
<i>Cathy Helgason and Thomas H. Jobe</i>	
G-69	
Tuning Discrete PI Controllers by Fuzzy Fitness Based Genetic Algorithms	242
<i>Johan Manuel Gantiva, Jose Yeferson Sanchez Sanchez, Jose Jairo Soriano and Miguel Alberto Melgarejo</i>	
G-71	
A Generalized Fuzzy Extension of EL++	248
<i>Afeef Bahri, Rafik Bouaziz and Faiez Gargouri</i>	
G-73	
An Application of a Neuro-Fuzzy Inference System For Pattern Classification of HDD Defect Distribution	254

<i>Un-Chul Moon, Hoyoun Jang and Marcus Vinicius dos Santos</i>		
<u>G-74</u>	A hybrid approach for Multi-Criteria Decision Problems	259
	<i>Karima Sedki and Veronique Delcroix</i>	
<u>G-75</u>	Gain Scheduling Fuzzy Logic Controller For a Wall-Following Mobile Robot	265
	<i>Khaled Aljanaideh and Kudret Demirli</i>	
<u>G-76</u>	On the coincidence of conditional functions	271
	<i>Claudi Alsina, Enric Trillas and Itziar Garcia-Honrado</i>	
<u>G-77</u>	Fuzzy Concept Lattices: Examples using the Gene Ontology	276
	<i>Valerie Cross, Meenakshi Kandasamy and Wenting Yi</i>	
<u>G-80</u>	A Study Comparative Between Fuzzy c-means and ckMeans Algorithms	282
	<i>Rogerio R. De Vargas and Benjamin R. C. Bedregal</i>	
<u>G-81</u>	New Uninorm-Based Neuron Model and Fuzzy Neural Networks	288
	<i>Andre Lemos, Walmir Caminhas and Fernando Gomide</i>	
<u>G-82</u>	Design and Implementation of a Fuzzy Logic Controller on an FPGA using VHDL	294
	<i>Davi Oliveira, Arthur Plinio de Souza Braga and Otacilio Almeida</i>	
<u>G-83</u>	FDT 1.0: An Improved Fuzzy Decision Tree Induction Tool	300
	<i>Nael Abu-halaweh and Robert W. Harrison</i>	
<u>G-84</u>	Design and Implementation of a Mamdani Fuzzy Inference System on an FPGA using VHDL	305
	<i>Davi Oliveira, Gustavo Alves de Lima Henn and Otacilio Almeida</i>	
<u>G-88</u>	FuzzyProbSim: Fuzzy Probability as Similarity Measure	311
	<i>Anca Ralescu, Sofia Visa and Stefana Popovici</i>	
<u>G-89</u>	Extended Chebyshev type inequality for Sugeno integral	317
	<i>Heriberto Roman-Flores, Arturo Flores-Franulic and Hamzeh Agahi</i>	
<u>G-92</u>	Linguistic Representation of Nash Equilibriums in Fuzzy Games	321
	<i>Setareh Sharifian, Alireza Chakeri and Farid Sheikholeslam</i>	
<u>G-93</u>	Traffic Signal Control with Adaptive Fuzzy Coloured Petri Net Based on Learning Automata	327
	<i>Siamak Barzegar, Maryam Davoudpour, Mohammad Reza Meybodi, Alireza Sadeghian and Mehrdad Tirandazian</i>	
<u>G-94</u>	Modeling Linguistic Label Perception in Tourism E-Satisfaction with Type-2 Fuzzy Sets	335
	<i>Masoomeh Moharrer, Hooman Tahayori and Alireza Sadeghian</i>	
<u>G-95</u>	Hopfield Neural Networks as Pseudo Random Number Generators	341
	<i>Kayvan Tirdad and Alireza Sadeghian</i>	
<u>G-97</u>	Interval Type-2 Boolean Fuzzy Systems Are Universal Approximators	347
	<i>Hao Ying and Fei You</i>	
<u>G-98</u>	A New Approach to Improve the Accuracy of Online Clustering Algorithm Based on Scatter/Gather Model	351
	<i>Kian Farsandaj, Chen Ding and Alireza Sadeghian</i>	

T1: Special Session: Inter-relation between interval and fuzzy techniques

T2: Special Session: Recent Advancements in Fuzzy Type-2 Systems

- [T2-19](#) **Interval Type-2 Fuzzy Markov Chains: An approach** 00000000000000000000000000000000; 7
Juan Carlos Figueroa Garcia

[T2-96](#) **MiniMax -Stable Cluster Validity Index for Type-2 Fuzziness** 00000000000000000000000000000000623
Ibrahim Ozkan and I. Burhan Turksen

T3: Special Session: Type-2 fuzzy logic systems and control

[T3-35](#)

Type-II Fuzzy Route Choice Modeling 628
Yousef Shafahi, Amir Zarinbal Masouleh and Marzieh Zarinbal Masouleh

[T3-46](#)

A Simple Approach for Designing a Type-2 Fuzzy Controller for a Mobile Robot application 633
Leonardo Leottau and Miguel Melgarejo

[T3-65](#)

Robustness of Interval Type-2 Fuzzy Logic Systems 639
Mohammad Biglarbegian, William Melek and Jerry Mendel

[T3-72](#)

An Approach for Channel Equalization Using Quasi Type-2 Fuzzy Systems 645
Luis Felipe Albarracin and Miguel Alberto Melgarejo

[T3-78](#)

Acoustic Emission Signal Feature Analysis Using Type-2 Fuzzy logic System 64:
Qun Ren, Luc Baron, Marek. Balazinski and Krzysztof Jemielniak

[T3-86](#)

Intelligent Coordinated Control of Circulating Fluidized Bed Boiler 656
X. F. Li, Shi-He Chen and Qing Zhong

T4: Special Session: Intelligent Agents and Fuzzy Multi-Agent Systems

[T4-42](#)

A New Intelligent Multi-Agent System for Management of Ordering Policies in A Fuzzy Supply Chain 663
M. H. Fazel Zarandi, Milad Avazbeigi, Mohammad Hassan Anssari, A. Mohaghar and I. Burhan Turksen

T5: Special Session: Hidden and Fuzzy Information Elicitation with Intelligent Data Mining

[T5-99](#)

A Fuzzy Approach to Intensive Data Mining 669
Massimo Buscema and Pier Luigi Sacco

[T5-100](#)

Activation and Competition System and Universe Lines Algorithm 677
Massimo Buscema and Pier Luigi Sacco

[T5-101](#)

A New Meta-Classifier 684
Massimo Buscema, Stefano Terzi and William Tastle

[T5-102](#)

A New Method of Multi Dimensional Scaling 68;
Giulia Massini, Stefano Terzi and Massimo Buscema

[T5-103](#)

Artificial Adaptive Systems and Predictive Medicine 697
Enzo Grossi and Massimo Buscema

[T5-104](#)

Application of Adaptive Systems Methodology to Radiotherapy 6: 3
Massimo Buscema, Giulia Massini, Francis Newman, Enzo Grossi and William Tastle