

2012 Annual Meeting of the North American Fuzzy Information Processing Society

(NAFIPS 2012)

**Berkeley, California, USA
6-8 August 2012**



**IEEE Catalog Number: CFP12750-PRT
ISBN: 978-1-4673-2336-9**

Papers

[General-32](#)

Soft Computing and Infectious Disease Modeling: A Review and Prescription '3

Nick Pizzi

[General-33](#)

Identifying Adverse Drug Reaction Signal Pairs by a Multi- Agent Intelligent System with Fuzzy Decision Model '9

Ayman Mansour, Hao Ying, Peter Dews, Yanqing Ji and R. Michael Massanari

[General-18](#)

A New Computational Fuzzy Time Series Model to Forecast Number of Outpatient Visits '35

Bindu Garg, M.M Sufyan Beg and A.Q Ansari

[General-37](#)

The SI epidemiological model with interactive fuzzy parameters'3;

Valtemir Cabral and Laécio C. Barros

[General-9](#)

Crisp and Fuzzy Cluster Validity: Generalized Intra-Inter Silhouette Index '45

Mohammad Rawashdeh and Anca Ralescu

[General-50](#)

Inclusion Based Robust Clustering of Fuzzy Sets '4;

Amit Banerjee

[General-54](#)

A Fuzzy Weighted Clustering Method for Symbolic Interval Data '57

Arthur Alvim and Renata Souza

[General-24](#)

Simulation of Language Evolution using Fuzzy Grammars '63

Juan Paulo Alvarado-Magaña, Antonio Rodríguez-Díaz, Juan R. Castro and Oscar Castillo

[General-45](#)

An API for Generalized Constraint Language based Expert System '69

Purvag Patel, Elham S. Khorasani and Shahram Rahimi

[General-63](#)

Structuring Information From Natural Language Descriptions: Accounting for Uncertainty '75

Julia Taylor and Victor Raskin

[General-3](#)

Some Comments on Excluded Middle and Contradiction Laws as Limit Values in Fuzzy Logic '7;

Omar Salazar and Jairo Soriano

[General-46](#)

Solving Satisfiability in Fuzzy Logics with Evolution Strategies '86

Tim Brys, Yann-Michaël De Hauwere, Martine De Cock and Ann Nowé

[General-49](#)

Zadeh Algebra As The Basis Of Łukasiewicz Logics '92

Jorma K. Mattila

[General-72](#)

Discrete Complex Fuzzy Logic "98

Dan E. Tamir, Mark Last, Horia N. Teodorescu and Abraham Kandel

[General-67](#)

Much Ado About Nothing: Fuzzy Infinities and Infinitesimals "": 4

Thomas Whalen and Murray Cohen

[General-4](#)

Contributions of Fuzzy Logic and Bounded Rationality to Cognitive Machines in Organizations "": :

Farley Nobre

[General-53](#)

Evaluation of Fuzzy Quantified Sentences: Keeping the Boolean Properties "": 6

Daniel Sanchez, Miguel Delgado, Maria-Amparo Vila and Jesus Chamorro-Martinez

[General-43](#)

Computing optimal optimistic decisions using min-based possibilistic networks "322

Salem Benferhat, Faiza Khellaf and Ismahane Zeddigha

[General-68](#)

Measuring Information Content for an Ontological Concept "328

Valerie Cross and Anurekha Chennai-Thiagarajan

[General-71](#)

Fuzzy Semantic Similarity in Linked Data using the OWA Operator "334

Parisa D. Hossein Zadeh and Marek Z. Reformat

[General-21](#)

Dynamical construction of binary relations in coreference detection "33:

Marcin Szymczak, Antoon Bronselaer, Sławomir Zadrozny and Guy De Tré

[General-22](#)

A Fast Learning Algorithm for Uninorm-Based Fuzzy Neural Networks "346

Andre Lemos, Walmir Caminhas and Fernando Gomide

[General-29](#)

Modular Neural Networks with Granular Fuzzy Integration for Human Ear Recognition "352

Daniela Sanchez and Patricia Melin

[General-44](#)

**Fuzzy Cognitive Maps Development Using Ant Colony Optimization with Local Search"358
Procedure**

Ye Chen, Lawrence Mazlack and Long Lu

[General-10](#)

A fuzzy linear regression model for interval type-2 fuzzy sets "364

Olga Poleshchuk and Evgeny Komarov

[General-11](#)

A Hybrid Approach to Develop an Interval Type-2 Fuzzy Logic System "369

Sepideh Sedehizadeh, Mohammad Hossein Fazel Zarandi and Ismail Burhan Turksen

[General-56](#)

A Faster Iterative Computation of the Centroid of an Interval Type-2 Fuzzy Set "374

Miguel Melgarejo and Carlos Celemin

[General-35](#)

Fuzzy Weights using Sensitivity Analysis for Double Inner Dependence AHP "37:

Shin-Ichi Ohnishi, Takahiro Yamanoi and Tatsuhiko Saito

[General-55](#)

A Critique of Fuzzy Rational Choice Models"384

Mark Wierman, Terry Clark, John Mordeson and William Tastle

[General-73](#)

Analytic Hierarchy Process and Granularity: Assessment of Risk Severity on Livestock Wellness'38:

Krishna Mohan Kovur, Marek Z Reformat and Witold Pedrycz

[General-26](#)

Bi-criteria Bottleneck Assignment Problem "'396

Yue Ge, Minghao Chen and Hiroaki Ishii

[General-48](#)

Fuzzy Decision Tree applied to Defects Classification of manufacturing the glass using data from a glass furnace Model "'39;

Herbert Costa and Alessandro La Neve

[General-61](#)

A fuzzy bounding box merging technique for moving object detection '3: 7

Jilin Tu, Ana Del Amo, Yi Xu, Li Guan, Mingching Chang and Thomas Sebastian

[General-12](#)

A Fuzzy Multi-Criteria Approach for Evaluating Biofuels Feedstocks "'3; 3

Jadwiga R. Ziolkowska

[General-16](#)

The Coordinated Control of Circulating Fluidized Bed Boiler Based on the Fuzzy PID Control'3; 9

Li X F

[General-59](#)

Decision Making on Energy Options using Type-2 Fuzzy Relation: A Case Study '426

Vidyottama Jain and Ashok Deshpande

[General-13](#)

Type-2 Fuzzy Rule Base System with Parameter Optimization for Forecasting of Tardiness '432

Mohammad Hossein Fazel Zarandi and Reyhaneh Gamasaee

[General-28](#)

An Interval Type-2 Fuzzy Model for Vehicle Routing Problems in Supply Chains'438

Mohammad Hosein Fazel Zarandi and Masoumeh Rostam Niakan Kalhori

[General-31](#)

Type-2 Fuzzy Granular Approach for Intelligent Control: The case of Three Tank water Control'444

Leticia Cervantes and Oscar Castillo

[General-47](#)

Ranking Biomedical Literature Search Result Based on Relevance Feedback Using Fuzzy Logic'44:
and Unified Medical Language System

Massuod Alatrash, Hao Ying, Peter Dews, Ming Dong and R. Michael Massanari

[General-76](#)

Modeling Construction Labour Productivity Using Fuzzy Logic and Exploring the Use of Fuzzy Hybrid Techniques "'456

Aminah Robinson Fayek and Abraham Assefa Tsehayae

[General-5](#)

A Technique for Deriving Analytical Structure of a General Class of Interval Type-2 TS Fuzzy Controllers "'462

Haibo Zhou and Hao Ying

[General-2](#)

Fuzzy calculus via extension of the derivative and integral operators and fuzzy differential equations "'468

Luciana Gomes and Laécio Barros

[General-40](#)

The Existence for a Solution on the Closed Subset to the Cauchy Problems of Fuzzy Differential Equations "473

Yabin Shao and Zengtai Gong

[General-75](#)

Locating Local Extrema under Interval Uncertainty: Multi-D Case "479

Karen Villaverde and Vladik Kreinovich

[General-14](#)

Powers of Indistinguishability Operators "485

Gabriel Mattioli and Jordi Recasens

[General-51](#)

A Concept of Universal Fuzzy Integrals "48;

Erich Peter Klement and Radko Mesiar

[General-60](#)

Using ranking function in dual approach to solve quadratic programming problem under fuzzy environment "495

Ricardo C. Silva and Akebo Yamakami

[General-69](#)

The Tellez-Molina-Villa Algorithm "49;

Arturo Tellez-Velazquez, Heron Molina-Lozano and Luis A. Villa-Varga

[General-42](#)

Dual Rough Approximations in Possibilistic Information Systems "4: 7

Michinori Nakata and Hiroshi Sakai

[General-62](#)

Partametric T-norms in Reconfigurable Digital Fuzzy Systems "4; 3

Ildar Batyrshin

[General-64](#)

A Review Of Developments From Fuzzy Rule Bases To Fuzzy Functions "4; 7

Burhan Turksen

[General-25](#)

On least coherence-preserving negations "522

Nicolas Madrid and Manuel Ojeda-Aciego

[General-38](#)

T-Indistinguishability Operators with respect to Ordinal Sums. "528

Dionis Boixader and Jordi Recasens

[General-57](#)

Regularity of upper semicontinuous fuzzy measures "533

Jun Li and Chen Li

[General-30](#)

Shooting method for fuzzy two-point boundary value problems 537

Barnabas Bede and Imre J Rudas

[General-17](#)

Conjectures in De Morgan Algebras "53;

Enric Trillas and Daniel Sanchez

[Basic and Advanced Computing with Words - 1-102](#)

Fast Fuzzy Set Qualitative Comparative Analysis (Fast fsQCA)"547

J.M. Mendel and M.M. Korjani

[Basic and Advanced Computing with Words - 1-103](#)

Fuzzy Set Qualitative Comparative Analysis (fsQCA): Challenges and Application "553

M.M. Korjani and J.M. Mendel

[Basic and Advanced Computing with Words - 1-101](#)

Validation of Fuzzy Set Qualitative Comparative Analysis (fsQCA): Granular Description of a Function "559

M.M. Korjani and J.M. Mendel

[Basic and Advanced Computing with Words - 2-104](#)

Solving Zadeh's Swedes and Italians Challenge Problem"565

M.R. Rajati and J.M. Mendel

[Basic and Advanced Computing with Words - 2-105](#)

Perceptual Computer Application in Learning Outcome Evaluation "56;

M. Hao and J.M. Mendel

[Basic and Advanced Computing with Words - 2-106](#)

Verbalizing time series data from a macroscopic viewpoint"577

I. Kobayashi

[Fuzziness in our Social and Cultural Life - 1-201](#)

How Many Unemployed Are There? and other early non-technical "Fuzzy-papers" by Lotfi A. Zadeh "583

Rudolf Seising,

[Fuzziness in our Social and Cultural Life - 1-202](#)

An analytic view on the fuzzy concept of wisdom "58:

Anett Hoppe, Mario Tabacchi

[Fuzziness in our Social and Cultural Life - 1-203](#)

Reasoning in Black and White? "595

Enric Trillas

[Fuzziness in our Social and Cultural Life - 2-204](#)

How to introduce Fuzzy Logic in Schools and High schools "599

Itziar García-Honrado

[Fuzziness in our Social and Cultural Life - 2-205](#)

A look at modern art evolution through the tinted glasses of fuzziness "5: 5

Marco Tabacchi, Setimo Termini

[Fuzziness in our Social and Cultural Life - 2-206](#)"5: :

Fuzzy inference Systems and social applications

Gisella Facchinetti, Tindara Addabbo, Tommaso Pirotti, Giovanni Mastroleo

[Fuzziness in our Social and Cultural Life - 3-207](#)

Applying a Fuzzy Model Approach to the Classification of Sexual Differences: Beyond the Male/Female Binary "5; 6

Veronica Sanz and Sergio Guadarrama

[Fuzziness in our Social and Cultural Life - 3-208](#)

Fuzzy Causality in Social Sciences"622

Cristina Puente, Jose Angel Olivas

[Inter-ralation between Interval and Fuzzy Techniques - 1-301](#)

Assessment of Functional Impairment in Human Locomotion: A Fuzzy-Motivated Approach "628

Murad Alaqtash, Thompson Sarkodie-Gyan, and Vladik Kreinovich

[Inter-ralation between Interval and Fuzzy Techniques - 1-302](#)

Categories of Interval-Valued Fuzzy Sets "634

John Harding, Carol Walker, and Elbert Walker

[Inter-ralation between Interval and Fuzzy Techniques - 1-303](#)

Estimating Correlation under Interval and Fuzzy Uncertainty: Case of Hierarchical Estimation"63:

Ali Jalal-Kamali

[Inter-ralation between Interval and Fuzzy Techniques - 2-304](#)

Laws of Excluded Middle and Contradiction in Checklist Paradigm Based Fuzzy Interval Logic 646

Eunjin Kim

[Inter-ralation between Interval and Fuzzy Techniques - 2-305](#)

Semi-Heuristic Target-Based Fuzzy Decision Procedures: Towards a New Interval Justification"652

Christian Servin, Van-Nam Huyhn, and Yoshiteru Nakamori

[Inter-ralation between Interval and Fuzzy Techniques - 2-306](#)

Do Constraints Facilitate or Inhibit Creative Problem Solving: A Theoretical Explanation of Two"657

Seemingly Contradictory Experimental Studies

Karen Villaverde, Olga Kosheleva, and Martine Ceberio

[Inter-ralation between Interval and Fuzzy Techniques - 3-75](#)

Local Extrema under Interval Uncertainty: Multi-D Case""663

Karen Villaverde and Vladik Kreinovich

[Inter-ralation between Interval and Fuzzy Techniques - 3-307](#)

An Interval-based Algorithm to Extract Fuzzy Measures for SQA problem "669

Xiaojing Wang, Angel F. Garcia Contreras, Martine Ceberio

[Inter-ralation between Interval and Fuzzy Techniques - 3-308](#)

Modal Intervals as a New Logical Interpretation of the Usual Lattice Order Between Interval

Truth Values "675

Francisco Zapata

[Hybrid Intelligent Systems - 1-401](#)

Optimization of Type-2 Fuzzy Integration in Ensemble Neural Networks for Predicting the Dow

Jones Time Series "67;

Martha Pulido, Patricia Melin

[Hybrid Intelligent Systems - 1-402](#)

Comparison between Multiobjective GA and PSO for Parameter Optimization of AT2-FLC for a

real application in FPGA ""687

Yazmin Maldonado, Oscar Castillo

[Hybrid Intelligent Systems - 1-403](#)

A Comparison between a DTCNN and SOM like Approach for Dynamic Object Detection in

Videos "693

Mario I. Chacon-Murguia, Jesus David Urias-Zavala

[Hybrid Intelligent Systems - 2-404](#)

Kinematic Analysis of Gait Cycle using a Fuzzy System for Medical Diagnosis "699

Omar Arias-Enriquez, Mario I. Chacon-Murguia, Rafael Sandoval-Rodriguez

[Hybrid Intelligent Systems - 2-405](#)

Decentralized Direct and Indirect I-Term Adaptive Fuzzy-Neural Control of a Bioprocess Plant""6: 5

Ieroham Baruch, Sergio M. Hernandez, Eloy Echeverria, Oscar Castillo

[Hybrid Intelligent Systems - 2-406](#)

Swarm Optimization for Design an Optimal Fuzzy Logic Controller of a DC Motor ""6; 3

Fevrier Valdez, Patricia Melin, Oscar Castillo

[Hybrid Intelligent Systems - 3-407](#)

Fuzzy Granular Gravitational Clustering Algorithm "6; 9

Mauricio A. Sanchez, Oscar Castillo, Juan R. Castro, Antonio Rodriguez-Diaz

[Hybrid Intelligent Systems - 3-408](#)

Bio-inspired Optimization of Fuzzy logic Controllers for Autonomous Mobile Robot "725

Ricardo Martinez-Soto, Oscar Castillo, Luis T. Aguilar

[Hybrid Intelligent Systems - 3-409](#)

Interval type-2 fuzzy integral to improve the performance of edge detectors based on the gradient measure "72;

Olivia Mendoza, Patricia Melin

[Hybrid Intelligent Systems - 4-410](#)

Interval type-2 fuzzy logic for image edge detection quality evaluation "737

Felicitas Perez, Olivia Mendoza, Patricia Melin, Juan R. Castro

[Hybrid Intelligent Systems - 4-411](#)

Backpropagation method with type-2 Fuzzy Weight Adjustment for Neural Network Learning "743

Fernando Gaxiola, Patricia Melin, Fevrier Valdez

[Hybrid Intelligent Systems - 4-412](#)

Optimization Method for Membership Functions of Type-2 Fuzzy Systems based on the Uncertainty Level for Response Integration in Modular Neural Networks "749

Denisse Hidalgo, Patricia Melin

[Fuzzy logic with Engineering Applications - 1-27](#)

Application of Fuzzy Logic for Selection of Machinery Health Monitoring Strategies"755

Ajit Verma, Srividya Ajit, Alok Goyal and P.G. Ramesh

[Fuzzy logic with Engineering Applications - 1-501](#)

Segmentation of fingerprint images based on bi-level processing using Fuzzy rules "75;

Hasan Fleyeh, Erfan Davami, and Diala Jomaa

[Fuzzy logic with Engineering Applications - 1-502](#)

Forecasting Time-Between-Failures of Software using Fuzzy Time Series Approach "767

Dilip Kumar Yadav, S. K. Chaturvedi, and R. B. Misra

[Fuzzy logic with Engineering Applications - 1-503](#)

Fuzzy logic Application in Water Supply System Management - A Case Study "775

Asheesh Sharma, Jyoti Yadav, Pranjali Mandilkm, Parvin Ladkat, Ashok Deshpande

[Fuzzy logic with Engineering Applications - 2-504](#)

Fuzzy-based Fugacity Model for Propagating Uncertainty in Assessing Swimmer Exposures to Disinfection Byproducts"779

Roberta Dyck, Rehan Sadiq, Manuel Rodriguez, Sabrina Simard, Robert Tardif

[Fuzzy logic with Engineering Applications - 2-505](#)

Approximate reasoning in fuzzy resolution "785

Banibrata Mondal, Swapan Raha

[Fuzzy logic with Engineering Applications - 2-506](#)

Fuzzy Continuous Dynamical System: A Multivariate Optimization Technique "78;

Abhirup Bandyopadhyay, Samarjit Kar

[Fuzzy Optimization and Decision Making - 1-601](#)

A general model for Linear Programming with Interval Type-2 Fuzzy technological coefficients "798

Juan Carlos Figueroa Garcia

[Fuzzy Optimization and Decision Making - 1-602](#)

The Existence for a Solution on the Closed Subset to the Cauchy Problems of Fuzzy Differential Equations"7: 2

Ya-Bin Shao and Zeng-Tai Gong

[Fuzzy Optimization and Decision Making - 1-603](#)

A Type-2 Data Mining Optimization for Predicting Pistachio Global Market "7: 8

S. MalekMohamadi Golsefid, I.B. Turksen, and M. H. F. Zarandi

[Fuzzy Optimization and Decision Making - 2-604](#)

A systematic type-2 fuzzy optimization model for global market analysis and its application"7; 4

S. MalekMohamadi Golsefid, I.B. Turksen, and M. H. F. Zarandi

[Fuzzy Optimization and Decision Making - 2-605](#)

A New Validation Criteria for Type-2 Fuzzy C-means and Possibilistic C-means "7; :

Mohammad Hossein Fazel Zarandi and Abolfazl Doostparast Torshizi