

Contents

Fuzzy Model Based Predictive Control of Reaction Temperature in a Pilot Plant	1
Juan Manuel Escaño, Kritchai Withephanich, and Carlos Bordons	
On Fuzzy Cluster Validity Indexes for High Dimensional Feature Space	12
Fernanda Eustáquio, Heloisa Camargo, Solange Rezende, and Tatiane Nogueira	
OFNBee Method Used for Solving a Set of Benchmarks	24
Dawid Ewald, Jacek M. Czerniak, and Hubert Zarzycki	
Quality of Daily Work & Life Index – A Definition and Its Evaluation in a Fuzzy Way	36
Gisella Facchinetti, Giovanni Mastroleo, and Tommaso Pirotti	
A New Edge Detector Based on SMOTE and Logistic Regression	48
Raquel Fernandez-Peralta, Sebastia Massanet, and Arnau Mir	
A New Edge Detection Approach Based on Fuzzy Segments Clustering	58
Pablo A. Flores-Vidal, Daniel Gómez, Pablo Olaso, and Carely Guada	
A Note on Defuzzification of Fuzzy Pre-orders and Transitivity of Its Minimal Regular Strict Component.	68
Siméon Fotso and Louis Aimé Fono	
Metrics of Symmetric Difference on Fuzzy Sets Based on R-implicators of the Usual Families of t-norms	79
Siméon Fotso, Romuald Thierry Dzati Kamga, and Louis Aimé Fono	
An Enhanced Approach to Rule Base Simplification of First-Order Takagi-Sugeno Fuzzy Inference Systems	92
Caro Fuchs, Anna Wilbik, Saskia van Loon, Arjen-Kars Boer, and Uzey Kaymak	

Fitting Symmetric Fuzzy Measures for Discrete Sugeno Integration. . . .	104
Marek Gagolewski and Simon James	
A Novel Fuzzy Approach for Manager Selection in Organizations Through Multi Agent Simulation with Personal Characteristics	117
Paria Shams Ghahfarokhi, Naser Ghasem Aghaei, and Ehsan Taheri	
Toward General Type-2 Fuzzy Logic Systems Based on Shadowed Sets	131
Claudia I. Gonzalez, Patricia Melin, Oscar Castillo, Daniela Juarez, and Juan R. Castro	
Clustering U.S. 2016 Presidential Candidates Through Linguistic Appraisals	143
Raquel González del Pozo, José Luis García-Lapresta, and David Pérez-Román	
A Fuzzy Modelling Approach to Laundry Industry	154
Germán Carlos González Rodríguez, Juan Albino Méndez, Belén Melián Batista, and Jose M. Gonzalez-Cava	
Time-series-dynamics Modeling and Forecasting – An Accurate and Interpretable Genetic-Fuzzy Approach	165
Marian B. Gorzalczany and Filip Rudziński	
Extending Formal Fuzzy Sets with Triangular Norms and Conorms.	176
Adam Grabowski and Takashi Mitsuishi	
The Mann-Whitney Test for Interval-Valued Data	188
Przemyslaw Grzegorzewski and Martyna Śpiewak	
Graph Approach in Image Segmentation	200
Carely Guada, Daniel Gómez, J. Tinguaro Rodríguez, Javier Yáñez, and Javier Montero	
Fuzzy Model for the Prediction of the Dosage of Cement Mortars	213
Francisco Javier Gutiérrez García, Silvia Alayón Miranda, Eduardo González Díaz, and Pedro Pérez Díaz	
The Law of Contraposition and the Law of Importation for Probabilistic S-Implications	226
Piotr Helbin	
Possibilistic Analysis of Bayesian Estimators When Imprecise Prior Information Is Described by Shadowed Sets	238
Olgierd Hryniewicz	
SIFT with the F-transform Pre-processing	248
Petr Hurtik, Petra Števuliáková, and Irina Perfilieva	

Edge Detection Competition – Algorithms Based on Image Represented by a Fuzzy Function 260
 Petr Hurtik and Marek Vajgl

Estimating the Fuzzy Trade-Offs Between Health Dimensions with Standard Time Trade-Off Data 266
 Michał Jakubczyk and Dominik Golicki

A New Method for Solving Square Fuzzy Linear Systems. 278
 Vera Miler Jerković, Biljana Mihailović, and Branko Malešević

A Dynamic Bayesian Network Based Collaborative Filtering Model for Multi-stage Recommendation 290
 Weijie Jiang, Qiang Wei, and Guoqing Chen

Two-step Algorithm for Image Inpainting 302
 Aranzazu Jurio, Daniel Paternain, Miguel Pagola, Cedric Marco-Detchart, and Humberto Bustince

Data-Mining Approach to Finding Weights in the Model Averaging for Forecasting of Short Time Series. 314
 Katarzyna Kaczmarek-Majer and Olgierd Hryniewicz

Multicriteria Scoring Methods Using Pythagorean Fuzzy Sets 328
 Cengiz Kahraman, Basar Oztaysi, and Sezi Cevik Onar

Present Worth Analysis Using Pythagorean Fuzzy Sets. 336
 Cengiz Kahraman, Sezi Cevik Onar, and Basar Oztaysi

Interval-Valued Neutrosophic Extension of EDAS Method 343
 Ali Karaşan and Cengiz Kahraman

Scheduling Alternatives with Respect to Fuzzy and Preference Modeling on Time Parameters. 358
 Margarita Knyazeva, Alexander Bozhenyuk, and Igor Rozenberg

Aggregation of Forecasts and Recommendations of Financial Analysts in the Framework of Evidence Theory. 370
 Ekaterina Kutynina and Alexander Lepskiy

Usage of RDM Interval Arithmetic for Solving Cubic Interval Equation 382
 Marek Landowski

A Fuzzy Take on Graded Beliefs. 392
 Bénédicte Legastelois, Marie-Jeanne Lesot, and Adrien Revault d’Allonnes

Refocusing Attention on Unobserved Attributes to Reach Consensus in Decision Making Problems Involving a Heterogeneous Group of Experts	405
Marcelo Loor, Ana Tapia-Rosero, and Guy De Tré	
Fuzzy Edge Detection on Hyperspectral Images Using Upper and Lower Operators	417
A. Lopez-Maestresalas, C. Lopez-Molina, C. Perez-Roncal, S. Arazuri, H. Bustince, and C. Jarén	
Gradient Fusion Operators for Vector-Valued Image Processing	430
Carlos Lopez-Molina, Javier Montero, Humberto Bustince, and Bernard De Baets	
Analyzing the Behavior of Aggregation and Pre-aggregation Functions in Fuzzy Rule-Based Classification Systems with Data Complexity Measures	443
Giancarlo Lucca, Jose Sanz, Graçaliz P. Dimuro, Benjamín Bedregal, and Humberto Bustince	
Transformation of Variance to Possibilistic Variance and Vice Versa	456
Pasi Luukka, Jan Stoklasa, and Mikael Collan	
A Gravitational Approach to Image Smoothing	468
Cedric Marco-Detchart, Carlos Lopez-Molina, Javier Fernandez, and Humberto Bustince	
Ordered Fuzzy GARCH Model for Volatility Forecasting	480
Adam Marszałek and Tadeusz Burczyński	
Detecting Anomalous Network Traffic Using Evidence Theory	493
Ahmed Mattar and Marek Z. Reformat	
Fuzzy Logic Controller Design for the Ground Collision Avoidance System (GCAS)	505
Kamil Mazur, Norbert Grzesik, and Konrad Kuźma	
A Bibliometric Analysis of the First Twenty Years of Soft Computing	517
José M. Merigó, Enrique Herrera-Viedma, Manuel J. Cobo, Sigifredo Laengle, and Daniela Rivas	
On Invariant Measures on Intuitionistic Fuzzy Sets	529
Alžbeta Michalíková and Beloslav Riečan	
Special and Inversely Special Properties of Fuzzy Implications	535
Katarzyna Miś and Michał Baczyński	

Image Contours Detection with Deep Features and SVM 546
 Vojtech Molek

**On the Use of Divergences for Defining Entropies for Atanassov
 Intuitionistic Fuzzy Sets** 554
 Ignacio Montes, Susana Montes, and Nikhil Pal

**Using Group Decision Making Methods to Extract
 Experts Knowledge** 566
 Juan Antonio Morente-Molinera, Ignacio Javier Pérez,
 Francisco Javier Cabrerizo, Sergio Alonso, and Enrique Herrera-Viedma

Ant Colony Based Fuzzy C-Means Clustering for Very Large Data 578
 Dhruv Mullick, Ayush Garg, Arpit Bajaj, Ayush Garg,
 and Swati Aggarwal

**An Algorithm for Intermediate Quantifiers and the Graded Square
 of Opposition Towards Linguistic Description of Data** 592
 Petra Murinová, Michal Burda, and Viktor Pavliska

Undefined Values in Fuzzy Logic 604
 Petra Murinová, Michal Burda, and Viktor Pavliska

**A Hybrid Approach for Extracting Classification Rules Based
 on Rough Set Methodology and Fuzzy Inference System
 and Its Application in Groundwater Quality Assessment** 611
 Hossam A. Nabwey

Author Index 627

Advances in Fuzzy Logic and Technology 2017
Proceedings of: EUSFLAT- 2017 - The 10th Conference
of the European Society for Fuzzy Logic and Technology,
September 11-15, 2017, Warsaw, Poland IWIFSGN'2017
- The Sixteenth International Workshop on Intuitionistic
Fuzzy Sets and Generalized Nets, September 13-15,
2017, Warsaw, Poland, Volume 2
Kacprzyk, J.; Szmidt, E.; Zadrożny, S.; Atanassov, K.T.;
Krawczak, M. (Eds.)
2018, XI, 628 p. 198 illus., Softcover
ISBN: 978-3-319-66823-9