

Information Systems Engineering and Management 29

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Applications of Fuzzy Logic in Decision Making and Management Science

 Springer

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Editors

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Contents

An Introduction to Fuzzy Logic in Real Time Application Paradigm . . .	1
Arnab Basu and Chandrashekhar Lall Chaudhury	
Application of Bayesian Algorithm for Impacting Social Media Marketing on Smart Electric Motorcycle Purchase Intention	19
Bui Huy Khoi	
Optimizing Traffic Signal Control Using Fuzzy Logic: A Solution for Urban Congestion Management	35
Pinki Gulia, Rakesh Kumar, Ramandeep Sandhu, Manik Rakhra, Gagandeep Singh Cheema, and Deepika Ghai	
Optimizing Energy Efficiency in Smart Grids Using Deep Fuzzy Nets: A Comprehensive Approach to Power Regulation and Control . . .	61
K. Suresh Kumar, Pon. Maheskumar, R. Girimurugan, T. Jayachandran, P. Chacko Jose, and Biswadip Basu Mallik	
Making Sense of the Messy: How Fuzzy Logic Can Help Us Solve Real-Life Problems	89
Minh Tung Tran and Anirban Sarkar	
Application of Fuzzy Logic to Model and Control Rotavirus Spread Among Vaccinated and Unvaccinated Children	103
Vinita Dwivedi and Subrata Jana	
Synthesis of Fuzzy Sets and Their Practical Applications	117
Shiv K. Sharma and Shweta Singh	
Optimizing Inventory Levels in Retail: Fuzzy Logic-Based Decision Support Systems for Adaptive Inventory Management	131
Ajoy Kanti Das, Tahir Mahmood, Rakhil Das, and Suman Das	

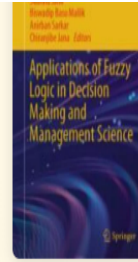
Neutrosophic Numbers in Identifying Best Teacher Awardee Using SWOT Analysis	145
Kala Raja Mohan, R. Narmada Devi, Subrata Jana, Regan Murugesan, Sathish Kumar Kumaravel, and S. Kalaiselvi	
Fuzzy Logics in Multi-criteria Decision Making Problems	155
Archana Parashar and Renu Negi	
A Case Study on Pharmaceutical Supplier Selection by Using the Integrated Fuzzy AHP MABAC Method	175
Brajamohan Sahoo and Bijoy Krishna Debnath	
A Novel Approach for Multi-cluster-Based River Flood Early Warning System Using Fuzzy-Logic-Based Learning and Rule Optimization	197
S M Nazmuz Sakib	
Evaluating Gamification Tools for Operating Management in Industrial Engineering: A Dual-Model Approach Using Fuzzy AHP and MACBETH	219
K. Kannakumar, R. Girimurugan, M. Sivakumar, P. Kanakarajan, K. Gopalakrishnan, G. Ramachandran, S. Nanthakumar, and Biswadip Basu Mallik	
Exploring the Efficacy of Machine Learning Algorithms Across Diverse Feature Selection Strategies in Rice Classification Tasks	245
K. Devi Priya, Kamparapu V. V. Satya Trinadh Naidu, V. Chandra Kumar, Anusuri Krishna Veni, Sudipta Banerjee, M. V. Rajesh, and K. Bhanu Rajesh Naidu	
Industrial Intelligence: A Fuzzy Logic Approach	255
Anita Mohanty, Subrat Kumar Mohanty, Ambarish G. Mohapatra, and Abhijit Mohanty	
Sensors and Data Driven Approaches in Precision Agriculture: A Comprehensive Review	275
P. Kalyanasundaram, Sivakumar Muthusamy, P. Kanakarajan, and N. Saravanan	
Fuzzy Logic Control for Adaptive Fan Speed Regulation Based on Temperature Variations in Cold, Warm, and Hot Seasons	291
Prashant C. Ramteke	
Improving Diabetic Patient Care Through Fuzzy Logic: A Comprehensive Approach	307
Shweta Dwivedi, Syed Adnan Afaq, Mohammad Faisal, Ivnil Ghosh, and Sudipta Banerjee	

Causal Analysis of Heart Failure Mortality Among Females: A Fuzzy Logic Approach	325
Debjyoti Bora, Manash Pratim Barman, and Juri Borah	
Design and Realization of Interval Type-2 Fuzzy Logic Controller for a TITO Aero-Dynamic System	343
F. Paul Nishanth, Saroj Kumar Dash, and Soumya Ranjan Mahapatro	
Modeling a Fuzzy Transportation Problem for Securing Mission Critical Servers Using Attack Graph	365
Edithstine Rani Mathew and Lovelymol Sebastian	
The Ranking Function-Based Defuzzification Technique and Application of Type-2 Fuzzy Logic to Study a Triple Goal-Based 4D-Transportation Problem with Carbon Emission Effect	379
Palash Sahoo	
Exploring Machine Learning Techniques for Enhanced Chronic Kidney Disease Diagnosis: A Comprehensive Survey	411
V. Chandra Kumar and R. Kalpana	
Enhancing Fuzzy Multi Criteria Decision Making Technique in Engineering Design Problem	431
Syed Adnan Afaq, Shweta Dwivedi, Mohammad Faisal, Subrata Jana, Ummey Habiba, and Mohammed Siddique	
The Assessment of Customer Satisfaction of a Product in a Manufacturing System Using Adaptive Neuro Fuzzy Interference System	453
Satyabrata Podder, Arka Dasgupta, and Arunabha Chanda	
Application of Neutrosophic Pythagorean Supra Topological Spaces in Attribute Decision-Making	497
R. Narmada Devi and Yamini Parthiban	


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pp 431–452 | [Cite this chapter](#)



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Abstract

Fuzzy logic provides a powerful tool for addressing the complexities and uncertainties in multicriteria decision-making (MCDM) problems. Allowing for degrees of truth effectively handles the vagueness inherent in human judgments and subjective evaluations. In MCDM, fuzzy logic employs fuzzy sets and membership functions to represent linguistic variables like “high,” “medium,” and “low.” Key methodologies include fuzzy aggregation operators and fuzzy multi-attribute utility theory, which integrate individual criterion evaluations into a comprehensive decision metric. Applications span diverse fields such as engineering, economics, environmental management, and healthcare, where it aids in evaluating alternatives under uncertain conditions. Fuzzy logic’s ability to capture and process imprecise information enhances the robustness and flexibility of MCDM

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