

# Contents

<b>Possible-Degree Generalized Hesitant Fuzzy Set and Its Application in MADM . . . . .</b>	<b>1</b>
Ying Han, Zhizhou Zhao, Qiangtian Li and Sheng Chen	
<b>Resource Allocation for Multiple Cloud Workflows Under Execution Time Uncertainty . . . . .</b>	<b>13</b>
Michal Wosko, Irene Moser and Khalid Mansour	
<b>An Improved Parallel Method for Computing Rough Set Approximations . . . . .</b>	<b>25</b>
Chuan Luo, Tianrui Li, Junbo Zhang, Anping Zeng and Hongmei Chen	
<b>Comparisons Among <math>\alpha</math>-Generalized Resolution Methods in <math>\mathcal{L}_{n \times 2}F(X)</math> . . . . .</b>	<b>35</b>
Xingxing He, Yang Xu, Jun Liu, Xiaomei Zhong and Peng Xu	
<b>Texture Smoothing Based on Adaptive Total Variation. . . . .</b>	<b>43</b>
Huisi Wu, Yilin Wu and Zhenkun Wen	
<b>Hybrid Nested Partitions Method for the Traveling Salesman Problem. . . . .</b>	<b>55</b>
Decai Zong and Kangkang Wang	
<b>Motion Estimation Based on Patchwise-Optimized Optical Flow . . . . .</b>	<b>69</b>
Huisi Wu, Mingjun Song, Songtao Tu and Zhenku Wen	
<b>Release ‘Bag-of-Words’ Assumption of Latent Dirichlet Allocation . . . . .</b>	<b>83</b>
Junyu Xuan, Jie Lu, Guangquan Zhang and Xiangfeng Luo	
<b>Application of Empirical Mode Decomposition and Fuzzy Entropy to High-Speed Rail Fault Diagnosis. . . . .</b>	<b>93</b>
Jingjing Zhao, Yan Yang, Tianrui Li and Weidong Jin	

<b>Robust Face Recognition with Individual and Group Sparsity Constraints . . . . .</b>	<b>105</b>
Tianjiao Chen, Lei Qu and Sui Wei	
<b>Graph-Based Semi-supervised Feature Selection for Social Media Data . . . . .</b>	<b>115</b>
Na Wang, Zhihui Liu and Xia Li	
<b>Active Learning for Duplicate Record Identification in Deep Web . . . . .</b>	<b>125</b>
Pengpeng Zhao, Jie Xin, Xuefeng Xian and Zhiming Cui	
<b>Leaf Recognition Based on BGP Texture Matching . . . . .</b>	<b>135</b>
Huisi Wu, Pengtao Pu, Guoqiang He, Bing Zhang and Feng Zhao	
<b>Fast and Robust Leaf Recognition Based on Rotation Invariant Shape Context . . . . .</b>	<b>145</b>
Huisi Wu, Pengtao Pu, Guoqiang He, Bing Zhang and Lili Yuan	
<b>Action Recognition Based on Maximum Entropy Fuzzy Clustering Algorithm. . . . .</b>	<b>155</b>
Xiaoqin Tang and Guoqiang Xiao	
<b>A Multigranularity Surveillance Video Retrieval Algorithm for Human Targets . . . . .</b>	<b>165</b>
Zhenkun Wen, Jinhua Gao, Fumi Liu and Huisi Wu	
<b>Image Retrieval Based on Saliency Attention . . . . .</b>	<b>177</b>
Zhenkun Wen, Jinhua Gao, Ruijie Luo and Huisi Wu	
<b>A Fuzzy Social Network Analysis Method and a Case Study on <i>Tianya</i> Tourism Forum in China. . . . .</b>	<b>189</b>
Zi Lu, Ruiling Han, Weilu Du and Dianshuang Wu	
<b>Dynamic, Tagless Cache Coherence Architecture in Chip Multiprocessor . . . . .</b>	<b>201</b>
Mian Lou and Jianqing Xiao	
<b>Distributed Computation of Pure High-Order Word Dependence . . . . .</b>	<b>211</b>
Xingmao Ruan, Yueheng Sun, Hailin Wang, Yuexian Hou, Xiaozhao Zhao and Peng Zhang	

<b>A Method for UAV Real-Time Image Simulation Based on Hierarchical Degradation Model . . . . .</b>	<b>221</b>
Shuo Liu, Hongguang Li, Yongxian Yuan and Wenrui Ding	
<b>An Improved x-Corners Detection Algorithm on Distorted Images . . . . .</b>	<b>233</b>
Xin Luan, Xiufang Li, Dalei Song, Guojia Hou, Bingwei Wu, Qianli Jiang and Yongfang Wang	
<b>Multi-agent-Based Semi-supervised Consensus Support System for Large-Scale Group Decision Making . . . . .</b>	<b>241</b>
Iván Palomares, Francisco J. Quesada and Luis Martínez	
<b>Facial Feature Points Tracking with Online Reference Appearance Model . . . . .</b>	<b>253</b>
Xiuxiao Guo and Ying Chen	
<b>A Novel Graph Cut Algorithm for Weak Boundary Object Segmentation . . . . .</b>	<b>263</b>
Hongmei Tian, Bo Peng, Tianrui Li and Qin Chen	
<b>Hybridizing Social Filtering for Recommender Systems . . . . .</b>	<b>273</b>
Mingsong Mao, Jie Lu, Guangquan Zhang and Jinlong Zhang	
<b>Handling Multiple Objectives with Integration of Particle Swarm Optimization and Extremal Optimization . . . . .</b>	<b>287</b>
Min-Rong Chen, Jian Weng, Xia Li and Xi Zhang	
<b>Research on Fault Prognosis for Hydraulic Directional Valve Based on EMD and ELM. . . . .</b>	<b>299</b>
Hongru Li, Fei Gao and Baohua Xu	
<b>A Straight Line Matching Method Based on Intersecting Lines. . . . .</b>	<b>309</b>
Jiexian Zeng, Yajuan Zhang, Binbin Wang and Xiang Fu	
<b>A Robust IHC Color Image Automatic Segmentation Algorithm. . . . .</b>	<b>319</b>
Tan Yang, Wanfen Peng, Xiangru Li and Yongjun Wang	
<b>Iterated Local Search Algorithms for the Sequence-Dependent Setup Times Flow Shop Scheduling Problem Minimizing Makespan . . . . .</b>	<b>329</b>
Yanqi Wang, Xingye Dong, Ping Chen and Youfang Lin	

<b>An Auto Algorithm for Extracting the <math>\Omega</math> Phases in the Al Alloy TEM Digital Images. . . . .</b>	<b>339</b>
Bing-bin Liu, Yan-xia Gu, Zhi-yi Liu and Xiao-lin Tian	
<b>A Fuzzy Clustering Algorithm Based on Weighted Index and Optimization of Clustering Number . . . . .</b>	<b>349</b>
Wen-qi Wang and Qiang Li	
<b>Stable Frequency Transmission Emerging from Spiking-Timing-Dependent Plasticity in Spiking Neural Network . . . . .</b>	<b>361</b>
Qian Zhou, Guizhi Xu, Yunzhi Chen and Miaomiao Guo	
<b>The Research on Trust Computation Model for C2C e-Commerce . . . . .</b>	<b>371</b>
Laizhong Cui, Yuanyuan Jin and Nan Lu	
<b>A Distributed Approach to Aircraft Conflict Resolution Based on Satisficing Game Theory. . . . .</b>	<b>383</b>
Tianhang Wu and Wenbo Du	
<b>A Multiple-Phase Stratification-Based Hierarchical Clustering Over a Deep Web Data Source . . . . .</b>	<b>395</b>
Yuanliu Liu, Pengpeng Zhao, Xu Zhou and Zhiming Cui	
<b>A Novel Method Based on Watershed and Transfer Learning for Recognizing Immature Precursor Cells. . . . .</b>	<b>405</b>
Xuehua Liu, Guitao Cao and Dan Meng	
<b>A Least Random Shuffled Frog-Leaping Algorithm . . . . .</b>	<b>417</b>
Honglong Xu, Gang Liu, Minhua Lu and Rui Mao	
<b>A Study on Sequential Post Project Evaluation of Cascade Hydropower Stations Based on Multi-objective-AHP Decision-Making Model. . . . .</b>	<b>427</b>
Binbin Tang, Baochen Liu and Zhihua Deng	
<b>A New Method of Adjusting Inconsistent Pairwise Comparison Matrix. . . . .</b>	<b>435</b>
Guohua Wang, Zhe Cui, Jingxian Chen and Liang Liang	
<b>A New Similarity Measure-Based Collaborative Filtering Approach for Recommender Systems. . . . .</b>	<b>443</b>
Wei Wang, Jie Lu and Guangquan Zhang	

<b>The Sensor Behavior Description and Algorithm in Ambient Intelligence Environment . . . . .</b>	<b>453</b>
Xiaolong Zeng, Zhangqin Huang, Yiyuan Ren, Chunhua Xiao and Lanxin Qiu	
<b>An Improved Adaptive Artificial Bee Colony Algorithm . . . . .</b>	<b>465</b>
Liyang He and Qingyuan Bai	
<b>A Robust QR Code Extraction Algorithm . . . . .</b>	<b>475</b>
Saifeng Shen, Xiaobo Lu, Hui Qi and Xiao Jiang	
<b>An Image Edge Detection Algorithm Based on Wavelet Transform and Mathematical Morphology . . . . .</b>	<b>485</b>
Keyong Shao and Yun Zou	
<b>Trajectory Recognition Based on Asynchronous Hidden Markov Model . . . . .</b>	<b>497</b>
Peng Qin and Ying Chen	
<b>An Efficient Memory-Improved Proportionate Affine Projection Sign Algorithm Based on <math>l_0</math>-Norm for Sparse System Identification . . . . .</b>	<b>509</b>
Yi Yu and Haiquan Zhao	
<b>An Interactive Path Planning Method Based on Fuzzy Potential Field in Game Scenarios . . . . .</b>	<b>519</b>
Li Yan, Yu Shuai and Zhao Heling	
<b>Community Detection in Heterogeneous Multi-mode Social Network via Co-training . . . . .</b>	<b>531</b>
Na Wang, Piao Chen and Xia Li	
<b>A Coded Structure-Light Method of Image Registration . . . . .</b>	<b>539</b>
Shaofang Lu, Xuanchen Chen, Haifeng Wang, Xiaohong Liu and Yan Zhao	
<b>Historical Sensing Data Mining in Cognitive Radio Networks . . . . .</b>	<b>549</b>
Xin-Lin Huang, Yuan Xu and Erwu Liu	
<b>LS-SVM Combination Prediction Technique Based on Prediction Correlation and Its Application . . . . .</b>	<b>559</b>
Baohua Xu and Dong Han	

<b>Emotion Recognition Model Based on RBF Neural Network in E-Learning</b> . . . . .	567
Wansen Wang and Rui Li	
<b>Automatic Robust Designs of Template Parameters for a Type of Uncoupled Cellular Neural Networks</b> . . . . .	577
Min Zhang, Lequan Min and Xiaoliang Zhang	
<b>Multiobjective Estimation of Distribution Algorithms Using Multivariate Archimedean Copulas and Average Ranking</b> . . . . .	591
Ying Gao, Lingxi Peng, Fufang Li, Miao Liu and Xiao Hu	
<b>Sar Image Registration Using a New Approach Based on the Region Feature</b> . . . . .	603
Xu Ying and Zhou Yan	
<b>A Probabilistic Neutral Network Based Approach for Radar/ESM Track Association</b> . . . . .	615
Zhou Yan and Xu Ying	
<b>A Novel Iterative SIFT Points Matching Method</b> . . . . .	623
Xiangru Li, Tan Yang, Yu Lu and Zhiheng Wang	
<b>A Method for Generating Knowledge-Based Programs as Conditional Plans</b> . . . . .	635
Rajdeep Niyogi and Vihan Jain	
<b>Writer Identification Using Differential Chain Codes and Grid Features</b> . . . . .	647
Zhimin Huang, Dongli Wang and Yue Lu	
<b>Collision Avoidance Among Multiple Car-Like Robots in Common Environment</b> . . . . .	657
Dong Shen, Youfang Lin, Sheng Han and Ruibo Xun	
<b>A Multicriterion Query-Based Batch Mode Active Learning Technique</b> . . . . .	669
Yang Jiao, Pengpeng Zhao, Jian Wu, Yujie Shi and Zhiming Cui	
<b>Cluster-Based Smoothing and Linear-Function Fusion for Collaborative Filtering</b> . . . . .	681
Li Sun, Guoqing Hao, Jiyun Li and Juntao Lv	

<b>Double Bee Population Evolutionary Genetic Algorithm with Filtering Operation . . . . .</b>	<b>693</b>
Jia Mei and Huajian Wu	
<b>Process Mining from the Organizational Perspective . . . . .</b>	<b>701</b>
Weidong Zhao and Xudong Zhao	
<b>A Novel Image Segmentation Algorithm Based on Multiple Features Fusion with Hypergraph and Superpixel . . . . .</b>	<b>709</b>
Wei Wei, Haichuan Yang, Zhuangzhi Wu, Xiao Bai, Xiechang Sun and Yinchuan Liang	
<b>Studies of Numerical Scale Pedigree in Correspondence with Verbal Scale . . . . .</b>	<b>719</b>
Guohua Wang, Liang Liang, Zhe Cui and Jingxian Chen	
<b>Fuzzy Chance-Constrained Project Portfolio Selection Model Based on Credibility Theory . . . . .</b>	<b>731</b>
Li Li, Jingpeng Li, Quande Qin and Shi Cheng	
<b>A Fuzzy Representation for the Semantics of Hesitant Fuzzy Linguistic Term Sets . . . . .</b>	<b>745</b>
Rosa M. Rodríguez, Hongbin Liu and Luis Martínez	
<b>The Recognition of CAPTCHA Based on Fuzzy Matching . . . . .</b>	<b>759</b>
Haiying Zhang and Xuan Wen	
<b>Design of Improved Quasi-Orthogonal Space-Time Block Codes Based on Closed-Loop Control. . . . .</b>	<b>769</b>
Adan Ding, Fei Long, Yi Di and Pengwei Fu	
<b>Lattices Associated with Partial Injective Linear Maps of Finite Vector Spaces . . . . .</b>	<b>779</b>
Wei Jiang, Junli Liu, Qiuli Xu and Baohuan Zhang	
<b>Commuting Equation Based on Continuous t-conorms and Representable Uninorms . . . . .</b>	<b>789</b>
Feng Qin	
<b>Genetic Algorithm for Selective Harmonic Elimination PWM Control . . . . .</b>	<b>799</b>
Weiyi Zhang, Xiaodan Meng and Liao Jiang	

<b>Studying on Multi-constraint Multicast QoS Routing Problem in SRIO Embedded Network . . . . .</b>	<b>811</b>
Xiongkui Zhang, Meiguo Gao, Haoyue Luo and Yingmin Ma	
<b>Resonance-Based Sparse Decomposition Application in Extraction of Rolling Bearing Weak Fault Information . . . . .</b>	<b>823</b>
Wentao Huang, Yinfeng Liu and Xiaocheng Li	
<b>Joint of Multi-feature Fusion and Mutual Information-Based Image Semantic Annotation . . . . .</b>	<b>833</b>
Guiqian Zhu, Chunping Liu and Lingyan Zhang	
<b>2-Tuple Linguistic Aggregation Operators and Their Application in GDM Problems . . . . .</b>	<b>845</b>
Nesrin Halouani, Sonia Hajlaoui and Habib Chabchoub	
<b>A Linguistic Modeling Approach to Characterize Items in Computerized Adaptive Test for Intelligent Tutor Systems Based on Competency . . . . .</b>	<b>855</b>
Miguel Badaracco and Luis Martínez	
<b>A ROI Extraction Algorithm Based on Entropy Function Using Weights . . . . .</b>	<b>869</b>
Nianlong Han, Kangling Fang and Siming Cheng	
<b>Implementation of Vision-Based Tracking System for a Quadrotor . . . . .</b>	<b>879</b>
Xuelin Ding and Youling Yu	
<b>Automatic Hand Gesture Recognition Based on Shape Context . . . . .</b>	<b>889</b>
Huisi Wu, Lei Wang, Mingjun Song and Zhengkun Wen	
<b>Normalized Label Propagation for Imbalanced Scenario Classification . . . . .</b>	<b>901</b>
Fengqi Li, Guangming Li, Man Xue, Chuang Yu, Feng Xia and Nanhai Yang	
<b>Emergency Case Retrieval Based on Fuzzy Sets and Text Mining . . . . .</b>	<b>911</b>
Chao Huang, Shaobo Zhong, Xin Li, Fushen Zhang, Jianguo Chen, Guofeng Su, Quanyi Huang and Hongyong Yuan	



<b>Pre-evaluation of Contingency Plans for Meteorological Disasters Based on LINMAP Method . . . . .</b>	<b>921</b>
Fushen Zhang, Shaobo Zhong, Quanyi Huang, Xiaole Zhang, Hongyong Yuan and Xin Li	
<b>Research on Real-Time Simulation of Ship Power System . . . . .</b>	<b>931</b>
Xin Pan, Xinguo Huo and Yuan Feng	
<b>A Model for Linguistic Dynamic Multi-criteria Decision-Making . . .</b>	<b>939</b>
Le Jiang, Hongbin Liu, Luis Martínez and Jianfeng Cai	
<b>Probability Inequalities for Set-Valued Negatively Orthant Dependent Random Variables. . . . .</b>	<b>951</b>
Li Guan and Xia Wang	
<b>The Design and Simulation of Intelligent Traffic Signal Control System Based on Fuzzy Logic . . . . .</b>	<b>965</b>
Yi Lin	
<b>An Improved AODVjr Routing Algorithm in ZigBee Network . . . . .</b>	<b>975</b>
Jianqing Tang	
<b><math>\alpha</math>-Path Stability Analysis for Uncertain Differential Equations . . . . .</b>	<b>983</b>
Yuan Cao	
<b>Global Fuzzy Sliding Mode Control for Multi-joint Robot Manipulators Based on Backstepping. . . . .</b>	<b>995</b>
Keyong Shao and Qianhui Ma	
<b>A MIC-Based Empirical Study of Attribute Reduction . . . . .</b>	<b>1005</b>
Qinchao Tang and Minghui Yu	
<b>A New Segmentation Algorithm for 3D Colored Point Cloud Based on Grid. . . . .</b>	<b>1015</b>
Yan Wan, Liang Tan and Hongtai Tang	
<b>Advanced Backtracking Genetic Algorithm for TSP. . . . .</b>	<b>1025</b>
Liwei Tan and Xun Liu	
<b>Attribute Reduction of the Real Value Decision System Based on Conditional Entropy . . . . .</b>	<b>1033</b>
Wenxia Lu and Qiaoyan Li	

<b>A New Algorithm for Fatigue Detection in Driving. . . . .</b>	<b>1041</b>
Dongwei Chen, Zhen Wang, Qiusheng Zhuo and Fang Wu	
<b>Caption Detection and Positioning in Digital Video. . . . .</b>	<b>1051</b>
Zhujun Wang, Shanzhen Lan, Lei Yang and Yue Zhang	
<b>The Micro-Courses for Mobile Learning-Based Wireless Network . . . . .</b>	<b>1061</b>
Ling He, Xiaoqiang Hu and Yihuang Jiang	
<b>Integrated Compression Coding Method for UAV Reconnaissance Video and Still Image . . . . .</b>	<b>1067</b>
Chuan-Bo Kang, Wen-Rui Ding, Yong-Xian Yuan and Ai-Ying Lu	
<b>An HMM-Based Algorithm for Similar Layout Document Image Retrieval. . . . .</b>	<b>1077</b>
Jingwen Zhou, Ying Wen and Yue Lu	
<b>Similar Image Retrieval Using Color Histogram in HSV Space and SIFT Descriptor with FLANN. . . . .</b>	<b>1085</b>
Yaru Wang, HongXin Li and LongKui Wang	
<b>Researches on Magnetostrictive Hybrid Vibration Isolation System Based on Sliding Mode Algorithm . . . . .</b>	<b>1095</b>
Lihua Yang, Jingjun Lou and Shijian Zhu	
<b>Performance Analysis of Rule-Based Fuzzy System Based on Fuzzy Differential Equations. . . . .</b>	<b>1107</b>
Dan Wu, Zuohua Ding and Abraham Kandel	
<b>A Purpose-Involved Role-Based Access Control Model . . . . .</b>	<b>1119</b>
Yingjie Wang, Zhihong Zhou and Jianhua Li	
<b>Velocity Improvement-Particle Swarm Optimization . . . . .</b>	<b>1133</b>
Yue Wang and Jian Liu	
<b>Collaborative Filtering Algorithm Based on Preference of Item Properties. . . . .</b>	<b>1143</b>
Xiao-gang Yang	
<b>An Adaptive Unified Storage Scheme for Heterologous and Heterogeneous Data in Cloud Center. . . . .</b>	<b>1151</b>
Jun Hu, Kai He, Chuanhe Huang and Lei Chen	

<b>New Operations of the Intuitionistic Fuzzy Sets in a Crisp Approximation Space and Applications . . . . .</b>	<b>1167</b>
Qiangtian Li, Ying Han and Sheng Chen	
<b>A Contextual Composition Algorithm Based on Ontology Semantic . . . . .</b>	<b>1179</b>
Xiaobin Zhang and Qianqian Shen	
<b>The Research of the Influence Based on <i>Variation Degree</i> to Perceptual Imagery . . . . .</b>	<b>1187</b>
Yingjie Chai and Gang Liu	