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# Advances in Natural Computation, Fuzzy Systems and Knowledge Discovery

Volume 1

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# Preface

The 2019 15th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD 2019) was held from July 20 to 22, 2019, in Kunming, China, colocated with the 5th International Conference on Harmony Search, Soft Computing and Applications (ICHSA 2019).

ICNC-FSKD is a premier international forum for scientists and researchers to present the state of the art of machine learning, data mining, and intelligent methods inspired from nature, particularly biological, linguistic, and physical systems, with applications to computers, systems, control, communications, and more. We are delighted to receive many submissions from around the globe. After a rigorous review process, the accepted papers are included in this proceedings.

Kunming is the capital and largest city of Yunnan Province in southwest China. Kunming is also called the Spring City due to its mild sunny weather all year round. Kunming is located at the northern edge of the large Lake Dian, surrounded by famous temples. Attractions near Kunming include Stone Forest (South China Karst, a UNESCO Natural World Heritage Site), Village of Ethnic Culture, Western Hill, and Dragon Gate. Other UNESCO sites in Yunan are Old Town of Lijiang, Three Parallel Rivers of Yunnan Protected Areas, Chengjiang Fossil Site/Maotianshan, and Cultural Landscape of Honghe Hani Rice Terraces/Yuanyang.

We would like to sincerely thank all organizing committee members, program committee members, invited session organizers, and reviewers for their hard work and valuable contribution. Without your help, this conference would not have been possible. Special thanks go to Kunming University of Science and Technology for hosting this event. We thank Springer for publishing the proceedings. We are very

grateful to the keynote and invited speakers for their authoritative speeches. We thank all the authors and conference participants for using this platform to communicate their excellent work.

August 2019

Yong Liu  
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Aiping Zhou  
Pucheng Zhou  
Zhiwen Zhou  
Xiaolan Zhu  
Xianxia Zou

# Contents

**Natural Computation: Theory and Algorithms - Deep Learning and Feedforward Neural Networks**

**Optimizing Convolutional Neural Network Architecture Using a Self-adaptive Harmony Search Algorithm . . . . . 3**  
Yin-Fu Huang and Jung-Sheng Liu

**Global Features of Fused Frame Relationships Help Video Classification . . . . . 13**  
MengYao Kong and Pin Lv

**A Comparison and Strategy of Semantic Segmentation on Remote Sensing Images . . . . . 21**  
Junxing Hu, Ling Li, Yijun Lin, Fengge Wu, and Junsuo Zhao

**Att-ConvLSTM: PM<sub>2.5</sub> Prediction Model and Application . . . . . 30**  
Zhe Xu and Yi Lv

**SAR Ship Detection Method Based on Convolutional Neural Network and Multi-layer Feature Fusion . . . . . 41**  
Bangzheng Yue, Wenda Zhao, and Song Han

**Deep Learning Training Management Platform Based on Distributed Technologies in Resource-Constrained Scenarios . . . . . 54**  
Jie Li, Guoteng Wang, Changsheng Zhang, and Bin Zhang

**A Deep Learning Based Reasoner for Global Consistency in Named Entity Recognition . . . . . 63**  
Xiaoxiao Yin, Ruifang Liu, Daqi Zheng, and Zhengdong Lu

**Multi-level Feature Combination in Dialogue State Tracking. . . . . 72**  
Yang Zheng, Ruifang Liu, and Sheng Gao

**Unmanned Aerial Vehicles Path Planning Based on Deep Reinforcement Learning** . . . . . 81  
Guoqiu Wang, Xuanyu Zheng, Haitong Zhao, Qidong Zhao, Changsheng Zhang, and Bin Zhang

**Apple Freshness Recognition Technology Based on Gas Sensors** . . . . . 89  
Wei Wang, Zhihui Guo, Maozhen Li, and Yungang Liu

**A Review of the Theory and Method for New Developed Feedforward Neural Networks** . . . . . 105  
Daiyuan Zhang

**Awareness Learning for Balancing Performance and Diversity in Neural Network Ensembles** . . . . . 113  
Yong Liu

**Natural Computation: Theory and Algorithms - Genetic and Evolutionary Algorithms**

**A Model and an Algorithm for Empty Car Distribution in Railway Transportation** . . . . . 123  
Lanfen Liu and Xinfeng Yang

**Levelized Cost of Energy Optimization Method for the Dish Solar Thermal Power Generation System** . . . . . 132  
Genye Dang, Hongsheng Su, and Biao Yue

**A Novel Ant Colony Optimization Algorithm with Dynamic Control Population for Community Detecting** . . . . . 141  
Jianjun Chen, Shupeng Gao, Zhen Su, Siqi Chen, and Xianghua Li

**A Hybrid Bat Algorithm Based on Combined Semantic Measures for Word Sense Disambiguation** . . . . . 149  
Xu Ying and Aws Hamed Hamad

**A Multi-objective Optimization Algorithm Based on Monarch Butterfly Optimization** . . . . . 158  
Rui Hu, Jian Gao, Rong Chen, and Jiahao Jiang

**An Improved Quantum Genetic Algorithm Based on Population Partition and Dynamic Probability Amplitude** . . . . . 168  
Cheng Yao Shi, Zhao Cheng Xuan, Chao Yang, and Yong Fei Yang

**Natural Computation: Theory and Algorithms - Nonlinear Phenomena, Chaos, Complex Networks and Systems**

**Sink Location Privacy Protection Algorithm Based on Tangential Path in WSN** . . . . . 181  
Leqiang Bai and Hongshu Zhu



<b>Study on the Energy Dissipation of Two Lane Traffic Flow with Lane Reduction</b> .....	189
Li-Si Jia and Wei Pan	
<b>Chaos and Quasi-period in Erbium-Doped Fiber Laser</b> .....	197
Senlin Yan	
<b>Global Stability for a Coupled System of Fractional-Order Differential Equations with Discontinuous Terms on Network</b> .....	206
Yang Gao	
<b>Optimal Identification of Multiple Diffusion Sources in Complex Networks with Partial Observations</b> .....	214
Xiang Li, Xiaojie Wang, Chengli Zhao, Xue Zhang, and Dongyun Yi	
<b>Exact Solutions for <math>(2 + 1)</math>-Dimensional Nonlinear Schrödinger Schrodinger Equation Based on Modified Extended tanh Method</b> .....	224
Mei Xiong, Longwei Chen, Chaochao Li, and Juan Wang	
<b>Natural Computation: Theory and Algorithms - Other Topics in Natural Computation Theory and Algorithms</b>	
<b>Extraction of Basic-Level Categories Using Dendrogram and Multidendrogram</b> .....	235
Mariusz Mulka, Wojciech Lorkiewicz, and Radosław P. Katarzyniak	
<b>Compressed Sensing of Complex Reflections Using Range-Azimuth Dictionary in a Bionic Sonar System</b> .....	244
Changsheng Yang, Junxiong Wang, Hong Liang, and Herbert Peremans	
<b>Relationships Between Dilemma Strength and Fixation Properties in Coevolutionary Games</b> .....	252
Hendrik Richter	
<b>Future Linear Matrix Equation of Generalized Sylvester Type Solved by Zeroing Neural Dynamics and 5-Instant ZeaD Formula</b> .....	260
Liangjie Ming, Nini Shi, Yang Shi, and Yunong Zhang	
<b>A Heuristic Scout Search Mechanism for Artificial Bee Colony Algorithm</b> .....	271
Ying Wu, Jian Xu, and Changsheng Zhang	
<b>Correlation Filter Tracking Algorithm Based on Spatio-Temporal Context</b> .....	279
Jin Die, Na Li, Ying Liu, and Yangyang Wu	
<b>Anti-occlusion Video Target Tracking Based on Double Threshold Judgment</b> .....	290
Ying Zhang, Fang-cang Du, and Ke Xu	

**Natural Computation Applications: Natural Computation in Pattern Recognition and Diagnostics**

**Research on the Modern Power Grid Planning Method Based on the Nature and Characteristic of Power Network Planning. . . . .** 299  
Ping Zhang, Jingbo Liu, and Zhijun Wang

**Capsule Recurrent Neural Network with Weight Update Using Dynamic Routing by Agreement: A Unified Model for Action Recognition in Videos. . . . .** 307  
Keyang Cheng, Lubamba Kasangu Eric, Rabia Tahir, and Maozhen Li

**A High-Dimensional and Multi-granularity Feature Selection Method Based on CNN and RF . . . . .** 317  
Yinghong Sun, Lei Liu, Sheng Chen, and Liangwen Hou

**Structural Nonlinear Damage Detection Based on Time Series Model and Probability Theory . . . . .** 326  
Huiyong Guo, Feng Zhang, and Jinjun Cheng

**Automatic Bug Priority Prediction Using DNN Based Regression . . . . .** 333  
Wei Zhang and Chris Challis

**Natural Computation Applications: Natural Computation in Signal Processing and Multimedia**

**Target Cropping: A New Data Augmentation Method of Fine-Grained Image Classification . . . . .** 343  
JunFeng Lu and MingXue Liao

**UAV Remote Sensing Image Stitching . . . . .** 352  
Hui Wu and Jun Chen

**Towards Data-Driven Automatic Video Editing . . . . .** 361  
Sergey Podlesnyy

**A Deep Speaker Embedding Transfer Method for Speaker Verification . . . . .** 369  
Kai Zhou, Qun Yang, Xiusong Sun, and Shaohan Liu

**A Deep Neural Network Model for Music Genre Recognition . . . . .** 377  
M. Suero, C. P. Gassen, D. Mitic, N. Xiong, and M. Leon

**A Spatial Fusion Scheme of Multi-focus Image Combining SVM-Based Classification and PCA-Based Weight. . . . .** 385  
Yikun Yang, Qian Jiang, Shaowen Yao, Gang Xue, Liwen Wu, and Xin Jin

<b>An Improved K-SVD Algorithm and Its Application for Image Denoising</b> . . . . .	399
Chunman Yan, Di Zhang, Youfei Hao, and Jiahui Chen	
<b>Natural Computation Applications: Other Natural Computation Applications</b>	
<b>Road Boundary Detection Using Ant Colony Optimization Algorithm</b> . . . . .	409
Tim Andersson, August Kihlberg, Anton Sundström, and Ning Xiong	
<b>Sharpening the Pan-Multispectral GF-1 Camera Imagery Using the Gram-Schmidt Approach: The Different Select Methods for Low Resolution Pan in Comparison</b> . . . . .	417
Qingsheng Liu	
<b>Detection of Vegetation Patch Growth by Absorption Feature Analysis on Tasseled Cap Brightness of Transects from Landsat 7 ETM+ Images</b> . . . . .	425
Qingsheng Liu	
<b>X-Architecture Steiner Minimal Tree Construction Based on Discrete Differential Evolution</b> . . . . .	433
Hailin Wu, Saijuan Xu, Zhen Zhuang, and Genggeng Liu	
<b>Detection Models Study of Chlorophyll in Winter Wheat's Leaves by Reflectance Spectra and Artificial Neural Networks</b> . . . . .	443
Zhenhong Rao, Li Zhang, and Xue Liang	
<b>Forecasting Tourist Arrivals in China Based on Seasonal Decomposition and LSSVR Model</b> . . . . .	452
Gang Xie, Jian Zhang, Boyu Yang, and Shouyang Wang	
<b>Techno-Economic Design and Optimal Operation of Active Radial Active Distribution Network Using Online Optimizer: Real Case Study in Sohag, Egypt</b> . . . . .	460
M. B. Shafik, G. I. Rashed, Hongkun Chen, M. R. Elkadeem, and Shaorong Wang	
<b>Artificial Honey Bee Swarm Intelligence for the Autograding of EBN</b> . . . . .	472
Weng Kin Lai, Jack En Gan, and Pui Mun Koh	
<b>Predicting Potential Years of Most Costly War Involving USA via ASF Approach</b> . . . . .	481
Yunong Zhang, Guanqun Yang, Ruifeng Wang, and Liangjie Ming	

<b>Guidance Instrumentation Systematic Error Separation Method Based on Particle Swarm Optimization</b> .....	491
Zhen-xing Li, Zhao-gang Wang, and Dong Li	
<b>Assessment of Global Left Ventricle Deformation Using Recursive Spherical Harmonics</b> .....	498
Malika Jallouli, Wafa Belhadj Khalifa, Anouar Ben Mabrouk, and Mohamed Ali Mahjoub	
<b>A Hybrid Swarm Intelligence-Based Algorithm for Finding Minimum Positive Influence Dominating Sets</b> .....	506
Geng Lin, Jinyan Luo, Haiping Xu, and Meiqin Xu	
<b>Limit Cycles Analysis in a Fifth-Order Vector Field with Asymmetric Perturbation Terms</b> .....	512
Yanjie Wang, Lijun Hong, and Xiaochun Hong	
<b>Exploring Optimal Model for Machine Learning by Differential Evolution</b> .....	522
Yi-Chuan Chiu, Yung-Tsan Jou, and Hsing-Hung Lin	
<b>Power Transformer Fault Diagnosis Based on Improved Bat Algorithms to Optimize RNN</b> .....	531
Chun Yan, Meixuan Li, and Wei Liu	
<b>Architecture of Real-Time and Dynamic Audit for Network Behavior Security</b> .....	539
Yan Zhang and Caiming Liu	
<b>A Comparison of Extreme Gradient Boosting and Convolutional Neural Network-Long Short-Term Memory for Service Demand Forecasting</b> .....	547
Manop Phankokkrud and Sirirat Wacharawichanant	
<b>Bifurcation of Limit Cycles and Their Relations in Three Perturbed Integrable Systems</b> .....	557
Lijun Hong, Wenyue Fu, and Xiaochun Hong	
<b>Modeling of Information Diffusion in Sina Weibo Based on Random Forest Classifier and SIR Model</b> .....	569
Zhang Jianyi, He Ping, Ken K. T. Tsang, and Deng Yuhui	
<b>Automatic Segmentation of Visible Epicardium Using Deep Learning in CT Image</b> .....	577
Ziyu Zhao, Yutaro Iwamoto, Yuji Tezuka, Hiroki Okada, Kiyosumi Maeda, Atsuyuki Wada, Atsunori Kashiwagi, and Yen-Wei Chen	
<b>Semi-automatic Cephalometric Landmark Detection on X-ray Images Using Deep Learning Method</b> .....	585
Yu Song, Xu Qiao, Yutaro Iwamoto, and Yen-Wei Chen	

<b>Robust Hand Gesture Recognition Using Multimodal Deep Learning for Touchless Visualization of 3D Medical Images</b> . . . . .	593
Kotaro Furusawa, Jiaqing Liu, Seiju Tsujinaga, Tomoko Tateyama, Yutaro Iwamoto, and Yen-Wei Chen	
<b>Tensor-Based Subspace Learning for Classification of Focal Liver Lesions in Multi-phase CT Images</b> . . . . .	601
Jian Song, Sihang Zhu, Lanfen Lin, Hongjie Hu, and Yen-Wei Chen	
<b>Analysis of Time Series Anomalies Using Causal InfoGAN and Its Application to Biological Data</b> . . . . .	609
Takaya Ueda, Masataka Seo, Yukako Tohsato, and Ikuko Nishikawa	
<b>Characterizing Phenotype Abnormality by Variational Auto Encoder</b> . . . . .	618
Yuki Kimura, Takaya Ueda, Seo Masataka, Yukako Tohsato, and Ikuko Nishikawa	
<b>Diversity Preservation in Genetic Algorithm by Lifespan Control</b> . . . . .	627
Yu Yamane, Masataka Seo, and Ikuko Nishikawa	
<b>Detection of Toothbrush Hair Loss Based on Machine Vision</b> . . . . .	636
Nengsheng Bao and Haitao Fang	
<b>Analysis of the Influencing Factors of the Artificial Intelligence Judicial Referee System</b> . . . . .	643
Deqiang Chen	
<b>An Application of Artificial Intelligence Technique in Horizontal Crustal Stress Measurement</b> . . . . .	651
Shike Zhang, Yuan Yuan, and Dewei Fu	
<b>Short-Term Bus Passenger Flow Forecast Based on the Multi-feature Gradient Boosting Decision Tree</b> . . . . .	660
Zixian Xu, Rui Zhu, Qiyue Yang, Lixia Wang, Runfang Wang, and Tong Li	
<b>Fuzzy Theory and Algorithms: Fuzzy Theory and Models</b>	
<b>One Pattern Recognition Algorithm Based on Centroids of Fuzzy Hyper-Pyramid Numbers</b> . . . . .	677
Yifeng Xu, Guixiang Wang, and Chenjie Shen	
<b>Approximation of Fuzzy Numbers by Using <math>\alpha</math>-<math>\beta</math>-knots Piecewise Linear Fuzzy Numbers</b> . . . . .	686
Chenjie Shen, Guixiang Wang, and Yifeng Xu	
<b>The Lattice of Interval Valued <math>(\in, \in \vee q)</math>-fuzzy Filters in a Given MTL-algebra</b> . . . . .	695
Chunhui Liu	

<b>A Ranking Model for Intuitionistic Fuzzy Preference Relation Under Uncertainty for Targeted Poverty</b> . . . . .	704
Dongxu Yu and Sidong Xian	
<b>A New Distance Measure Between Atanassov's Intuitionistic Fuzzy Sets Based on Mapping</b> . . . . .	712
Fang Su, Jing Li, Dongxuan Xiao, and Chengrui Duan	
<b>A Constraint Framework for Uncertain Spatiotemporal Data in RDF Graphs</b> . . . . .	727
Jinyao Wang, Xiaofeng Di, Jiemin Liu, and Luyi Bai	
<b>The Probability of Dual Hesitant Fuzzy Event and Its Applications to Bayesian Network Inferences</b> . . . . .	736
Xiu Jiu Yuan, Xue Jun Zhao, Jiang Li, and Lin Huang	
<b>Order Relations Between Interval Numbers</b> . . . . .	756
Haohao Li	
<b>Some New Distance Measures for Generalized Hesitant Fuzzy Sets</b> . . . .	764
Chen Bin	
<b>Determination of Multiple <math>q</math> Values for Tsallis-Entropy-Maximized-FCM</b> . . . . .	771
Makoto Yasuda	
<b>Very True Operators on Quasi-pseudo-MV Algebras</b> . . . . .	781
Guoqing Yang, Wenjuan Chen, and Anran Chen	
<b>The Analysis of the Fuzzy Solution to Fully Fuzzy Linear Systems in Two Perturbation Situations</b> . . . . .	791
Kun Liu, Wei-peng Li, Yong-ling Li, and Hong-ying Duan	
<b>A Novel Approach to Hesitant Fuzzy Soft Set Based Decision Making</b> . . . . .	800
Yanping He	
<b>A Novel Probability Evaluation Method Based on Fuzzy Fault Dependent Matrix</b> . . . . .	809
Haiyong Dong, Zhengjun Zhai, Qingfan Gu, Yanhong Lu, Guoqing Wang, and Miao Wang	
<b>A Multi-attribute Decision Making Method Based on Interval Pythagorean Fuzzy Language and the PROMETHEE Method</b> . . . . .	818
Wenyu Zhang, Yuting Zhu, Danshu Wang, Songmin Zhao, and Dadi Dong	
<b>A Multi-criterion Group Decision Making Method: CRITIC-WASPAS Based on Trapezoidal Intuitionistic Fuzzy Numbers</b> . . . . .	827
Wenyu Zhang, Songmin Zhao, Dadi Dong, Yuting Zhu, and Danshu Wang	

<b>An Interval Intuitionistic Fuzzy VIKOR Evaluation Method Based on Unknown Weight</b> .....	836
Wenyu Zhang, Dadi Dong, Songmin Zhao, Yuting Zhu, and Danshu Wang	
<b>Fuzzy Theory and Algorithms: Soft Computing and Granular Computation</b>	
<b>The Residual Power Series Method for Solving the Fractional Fuzzy Delay Differential Equation</b> .....	847
Qiujuan Tong, Yongzhen Zang, and Jianke Zhang	
<b>Credibility Assessment of Simulation Models Using Hesitant Cloud Linguistic Term Sets</b> .....	856
Xiaojun Yang, Zhongfu Xu, Chuan Shi, Hao Lei, and Changwei Yan	
<b>Fuzzy Entropy Clustering Image Segmentation Algorithm Based on Potential Two-Dimensional Histogram</b> .....	864
Changxing Li, Xiaolu Zhang, and Liu Lei	
<b>Fuzzy Applications: Fuzzy Pattern Recognition and Diagnostics</b>	
<b>Kernel Circulant Object Tracking Based on Illumination Invariant Features</b> .....	875
Zhenhai Wang, Bo Xu, and Xing Zhang	
<b>Hybrid Fuzzy CNN Network in the Problem of Medical Images Classification and Diagnostics</b> .....	883
Yuriy Zaychenko and Galib Hamidov	
<b>Fuzzy Applications: Fuzzy Optimization, Design, and Modeling</b>	
<b>The Assessment of Airline Service Performance with Dependent Evaluation Criteria by Generalized QFD and SAW Under Interval-Valued Fuzzy Environment</b> .....	895
Yu-Jie Wang, Li-Jen Liu, and Tzeu-Chen Han	
<b>Construction of Multivariable Fuzzy Time Series Model Based on Multidimensional Information Distribution Technology</b> .....	904
Ye Xue, Xiaoxiao Li, and Hengchun Fu	
<b>Research on Apple Yield Prediction Model</b> .....	913
Zhijun Wang, Xican Li, Yucun Wang, and Shuhan Cheng	
<b>A Probability Transition Matrix-Based Recommendation Algorithm for Bipartite Networks</b> .....	921
Dongming Chen, Chang Liu, Xinyu Huang, Dongqi Wang, and Jiarui Yan	

**CDIA: A Feasible Community Detection Algorithm Based on Influential Nodes in Complex Networks** ..... 930  
Xinyu Huang, Dongming Chen, Tao Ren, and Dongqi Wang

**Context-Sensitive Cross- and Auto-correlation Based Supervised Change Detection** ..... 938  
Chao Li, Huiying Ru, and Xudong Ru

**Fuzzy Applications: Uncertainty Management**

**Cultural Ranking of Countries Using the Analytic Hierarchy Process Methodology** ..... 949  
Jinling Li, Yuying Yang, Thomas L. Saaty, and Haixiang Guo

**Sustainable Performance Evaluation of Urban Mobility Projects Using Multicriteria Group Decision Making Approach** ..... 964  
Santoso Wibowo and Srimannarayana Grandhi

**Fuzzy Applications: Other Fuzzy Applications**

**A Parallel Fuzzy Method to Reduce Mixed Gaussian-Impulsive Noise in CT Medical Images** ..... 975  
Josep Arnal, Juan B. Pérez, and Vicente Vidal

**Structural Parameters Optimization and Grey Relational Analysis in Honeycomb Spiral Heat Exchangers** ..... 983  
Zhengfang Wang, Pengfei Han, Jia Wang, Wenjian Yu, and Ming Li

**Interval Valued Generalised Fuzzy Soft Expert Set and Its Application** ..... 991  
Chen Bin

**Author Index** ..... 1001