



ICNC'12-FSKD'12

29-31 May 2012, Chongqing, China



- [Home](#)
- [Call for Papers](#)
- [Topics](#)
- [Submission](#)
- [Final Submission](#)
- [Organizing Committee](#)
- [Program Committee](#)
- [About Chongqing](#)
- [Keynotes](#)
- [Conference Hotel](#)
- [Registration](#)
- [Contact us](#)

Home

The 2012 8th International Conference on Natural Computation (ICNC'12) and the 2012 9th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'12) will be jointly held from 29-31 May 2012, in Chongqing, China. Renowned as the Mountain City, Chongqing is a magnet for visitors from home and abroad for its cultural heritage and numerous attractions. There are many karst caves, hot springs, and gorges in the area. Major tourist spots in and near Chongqing include Dazu Grottoes (rock carvings began in the Tang Dynasty 650 A.D.), Three Gorges, Jinyun Mountain Natural Reserve, Hongya Cave, Shibaozhai, Wulong Karst, etc.,

All papers in the conference proceedings will be submitted to IEEE Xplore, EI Compendex and ISTP as with the past ICNC-FSKD conferences. **Extended versions of selected best papers will appear in an ICNC-FSKD special issue of *Computers & Mathematics with Applications*, an SCI-indexed journal (ICNC'12: Conference Record Number 19846; IEEE Catalog Number CFP12CNC-ART; ISBN 978-1-4577-2133-5; FSKD'12: Conference Record Number 19847; IEEE Catalog Number CFP12FSK-ART; ISBN 978-1-4673-0024-7).** ICNC'12-FSKD'12 is technically co-sponsored by the IEEE Circuits and Systems Society and the International Neural Network Society.

ICNC-FSKD is a premier international forum for scientists and researchers to present the state of the art of data mining and intelligent methods inspired from nature, particularly biological, linguistic, and physical systems, with applications to computers, circuits, systems, control, communications, and more. This is an exciting and emerging interdisciplinary area in which a wide range of theory and methodologies are being investigated and developed to tackle complex and challenging problems. The registration fee of US\$400 includes proceedings, lunches, dinners, banquet, coffee breaks, and all technical sessions.

Prospective authors are invited to submit manuscripts written in English. All submissions will be peer-reviewed by experts in the field based on originality, significance, quality and clarity. Authors should use the Latex style files or MS-Word templates obtained from the conference site to format their papers. Authors should submit PDF files of their manuscripts via the online submission system. Submissions imply that the papers have not been submitted elsewhere and will not be submitted elsewhere for publications before the review decisions of this conference.

Organizer & Technical Co-Sponsor :



Copyright ICNC'12-FSKD'12, Designed by School of Communication and Information Engineering, Chongqing University of Posts and Telecommunications

Proceedings

***2012 9th International Conference on
Fuzzy Systems and Knowledge Discovery***

FSKD 2012

29-31 May 2012

Chongqing, China

Editors

Yanbing Liu

Shigang Yue

Frank H. F. Leung

Guofeng Zhao

Lipo Wang



重庆邮电大学



IEEE



IEEE CIRCUITS AND
SYSTEMS SOCIETY



Preface

FSKD 2012

Dear Delegates,

Following the success of the 1st International Conference on Fuzzy Systems and Knowledge Discovery (FSKD 2002) in Singapore, FSKD 2005 in Changsha, FSKD 2006 in Xi'an, FSKD 2007 in Haikou, FSKD 2008 in Jinan, FSKD 2009 in Tianjin, FSKD 2010 in Yantai, and FSKD 2011 in Shanghai, FSKD 2012 was held jointly with the 8th International Conference on Natural Computation (ICNC 2012) on 29-31 May 2012 in Chongqing, China.

FSKD 2012 featured the most up-to-date research results in fuzzy systems and knowledge discovery as well as promoted cross-fertilization over these exciting and yet closely related areas, including fuzzy theory and models, soft computing and granular computation, privacy preserving data mining, parallel and distributed data mining, knowledge management and visualization, bioinformatics and bio-medical informatics, multimedia data mining, with innovative applications to reliability, finance, commercial, operations research, automata control, and more. FSKD'12 in Chongqing attracted numerous submissions worldwide and all submissions underwent rigorous reviews.

As the co-chairs of the FSKD 2012, we would like to thank all the committee members and reviewers for their timely help. We greatly appreciate the authors, speakers, invited session organizers, session chairs, and others who have made this conference another success. We would also like to thank all the attendees for participating in the conference. Our special thanks go to the IEEE Circuits and Systems Society and the International Neural Network Society for being technical co-sponsors. Last but not least, we wish to express our heartfelt gratitude to Chongqing University of Posts and Telecommunications, China for excellent logistics.

Yanbing Liu, Maozhen Li, Xiao-Jun Zeng, Guofeng Zhao, and Lipo Wang

May 2012

Reviewers

FSKD 2012

Fernando
Almirantearena
Juan Cao
Nana Cao
Wei Cao
Ruay-Shiung Chang
Yao-Chung Chang
Pei-Ju Chao
Bo Chen
Hong Chen
Jinbiao Chen
Jingnian Chen
Ke Chen
Ming-Chiao Chen
Rung-Ching Chen
Wenzhuo Chen
Xiankai Chen
Yunfang Chen
Zhi-Qiang Chen
Jao-Hong Cheng
Jinfang Cheng
Xiaolei Cheng
Xueyun Cheng
Zhang Cheng
Xuezhi Chi
Chao-Lung Chiang
Siwei Chong
Yu-Cheng Chou
Herbert Costa
Virgilio Cruz Machado
Li Cuiping
Pijus Kanti De
Guannan Deng
Peng Ding
Aihua Dong
Chao Dong
Haizhou Du
Lixiang Duan
Mark Evered
Jiancong Fan
Jing Fan
Nianbai Fan
Kui Fang
Min Fang
Weiyin Fei
Jun Feng
Na Feng
Qiang Feng
Wenli Feng
Guohong Fu
Kui Fu
Li Fu

Xianghua Fu
Xiaofeng Fu
Xiaoning Fu
Hongbo Gao
Hongwei Gao
Pengqi Gao
Kumar Gaurav
Hai Jian Ge
Shien Ge
Xinyang Ge
Guang-Gang
Geng
Z. Q. Gong
Zaiwu Gong
Hailan Gu
Jun Guo
Shuxiang Guo
Yi Guo
Yuchun Guo
Zhang Guo-Rong
Ali Hamzeh
Seog-Young
Han
Guoqiang Hang
Jiandong Hao
Zhifeng Hao
Qing He
S. H. He
Sachio Hirokawa
Jer Lang Hong
Sizu Hou
Tsai-Ming Hsieh
He Hu
Jie Hu
Shun-Ren Hu
Chao-Yi Huang
Chengshun
Huang
Qiong Huang
Rui Huang
Shanbo Huang
Jieih-Wei Hung
Lin Ji
Yanyan Ji
Jia Jia
Xiping Jia
Kang Jiang
Nan Jiang
Wei Jiang
Qiu Jianlin
Guo Jie

Xiao-Bo Jin
Chen Kai
Chao-Shun Kao
Chaliew Ketkaew
Hock Lye Koh
Fanhui Kong
Sun-Peng Kowang
Yushi Lan
Henry Lau
Kittichai
Lavangnananda
Guanling Lee
Tsair-Fwu Lee
Yuxia Lei
Chengdong Li
Dequan Li
Er-Tao Li
Fangwei Li
Gang Li
Gangqiang Li
Haoliang Li
Hongyan Li
Jianxin Li
Jingjiao Li
Junli Li
Liqing Li
Meiyi Li
Songchen Li
Tao Li
Tong Li
Wei Li
Wenguang Li
Xi Li
Xiaozhou Li
Youmou Li
Yuanchun Li
Zheng Li
Zhentao Li
Zhi-Jun Li
Zhu Li
Zuoan Li
Mou Lian-Ming
Ren-Hung Lin
Xiaogong Lin
Xiaohui Lin
Sitao Ling
Gao Linyuan
Aiqin Liu
Bo Liu
Cheng-Li Liu
Da Liu
Daohua Liu

Feng Liu
Honghai Liu
Hongjian Liu
Hongxia Liu
Jianxia Liu
Jinfu Liu
Peiqi Liu
Qingsheng Liu
Rui Liu
Shiang-Tai Liu
Shuang Liu
Xiaopei Liu
Xinwang Liu
Yan-Wen Liu
Yuhua Liu
Yu-Hui Liu
Yunjie Liu
Shun Long
Yang Longguang
Bin Lu
Hai Lu
Jin Lu
Qiu Lu
Xingfang Lu
Xinzhong Lu
Hua Luan
Ting Luo
Ye Luo
Qiu Yun Lv
Saadat M. Alhashmi
Bin Ma
Jiquan Ma
Qian Ma
Yide Ma
Sun Meiyu
Jian-Liang Meng
Qian Meng
Xiangfu Meng
Xudong Miao
Dengkui Mo
Hamed Mojallali
Felix Mora-Camino
Stephen Mounce
Seyed Zeinolabedin
Moussavi
Shaomin Mu
Ahmed Musa
Gulisong Nasierding
Jianjun Ni
Julio Cesar Nievola
Liubo Ouyang
Geethanjali P
Yongjuan Pan
Zhibin Pan
Guanghan Peng
Sheng-Lung Peng
Ya-Xiong Peng
Yueping Peng
Yun-Wei Pu
Shrinivas Pundlik
Swarnalatha
Purushotham

Weiye Qian
Qingli Qiao
Beibo Qin
Xiongpai Qin
Yuping Qin
Lin Qiu
Iman Rahimi
Atta Rahman
Jing Pu Ren
Hendrik Richter
Wei Ruan
Hao Rui
Lin Sha
Shafay Shamail
Yong-Hai Shan
Jing Shao
Yabin Shao
Ying Shen
Yeqiong Shi
Ying Shi
Zhicai Shi
Chen Shi-Jay
Hong Shu
Guojie Song
Wei Song
Nanta Sooraksa
Pitikhate
Sooraksa
Ching-Hung Su
Kehua Su
Zhen Su
Chengjie Sun
Jiping Sun
Shibao Sun
Wei Sun
Xinjuan Sun
Emmanuel
Tadjouddine
Hongbin Tan
Cong Tang
Yan Tang
Su Yean Teh
Marilde
Terezinha Prado
Santos
Yingjie Tian
Wang Tian Fei
Tingsong Du
Tingsong Du
Chang-Hsiung
Tsai
Chia-Chun Tsai
Chun-Wei Tsai
Meng-Hsiun Tsai
Paul Van Dooren
Yan Wan
Chao Wang
Feng Wang
Guangjun Wang
Haoming Wang
Huaqiu Wang
Jian-Ping Wang

Jie Wang
Jun Wang
Linlin Wang
Li-Xia Wang
Ming Wang
Ruopeng Wang
Suge Wang
Tinghua Wang
Xiaolong Wang
Xingwei Wang
Xingyu Wang
Yonglin Wang
Yuan Wang
Yunshan Wang
Zhaohui Wang
Zhen Wang
Zhengfang Wang
Zhongxing Wang
Chunfu Wei
Hang Wei
Jinmao Wei
Lai Wei
Liyang Wei
Xiaoyan Wei
Bin Wen
Zhang Wenhui
Tadeusz Witkowski
Gang Wu
Hao Wu
Ou Wu
Simiao Wu
Yingjie Xia
Long Xiang
Chun Xiao
Qian-Jun Xiao
Chun Xie
Hongtao Xie
Wenguang Xie
Xiang-Yun Xie
Mao Xilong
Lianglin Xiong
Bao-Chang Xu
Binfeng Xu
Hai Ying Xu
Jiapin Xu
Qingzheng Xu
Weihua Xu
Xuezhou Xu
Yaxi Xu
Yang Xue
Yu Xue
Zhenxia Xue
Bin Yan
Li Yan
Shijie Yan
Bo Yang
Chengdong Yang
Chu-Sing Yang
Peng Yang
Qiwen Yang
Rui Yang
Wenchuan Yang

Yang Yang
Yong Yang
Yuhong Yang
Zhixia Yang
Yunan Yao
Makoto Yasuda
Jianhua Ye
Jun-Min Ye
Shijie Ye
Hsueh-Chuan Yen
Jianqiang Yi
Peng Yinghui
Zeng Yinglan
Zhao Yiqing
Yingbing Yu
Zhengtao Yu
Bo Yuan
Cheng-Kang Yuan
Guo-Qiang Yuan
Hongfang Yuan
Hao Yue
Qi Yue
Abolghasem Zare
Shahneh
Yu Zeng
Tangsen Zhan
Yan Zhan
Aiqing Zhang
Chuanlin Zhang
Chunxia Zhang
Defei Zhang
Dongkai Zhang
Gang Zhang
Guang-Jun Zhang
Guixu Zhang
Guo Zhang
Hong Zhang
Hong Liang Zhang
Ji Zhang
Jing Zhang
John Zhang
Li Zhang
Peng Zhang
Qiang Zhang
Qingqing Zhang
Shaoyang Zhang
Shao-Zhong Zhang
Su-Xiang Zhang
Weijun Zhang
Xin-Mei Zhang
Xumei Zhang
Yan Zhang
Yancai Zhang
Yongli Zhang
Zhijun Zhang
Zhuoyong Zhang
Bin Zhao
Faxin Zhao
Hailiang Zhao
Hua Zhao
Jian Jun Zhao
Jieyu Zhao

Ping Zhao
Qing Zhao
Songzheng Zhao
Yong Zhao
Yonggang Zhao
Yue Zhao
Dequan Zheng
Xiaoling Zheng
Yaping Zhong
Junchi Zhou
Liqian Zhou
Pei-Ying Zhou
Wuneng Zhou
Cheng Zhu
Meng-Zhong Zhu
Xijun Zhu
Fuzhen Zhuang
Li Zou

2012 9th International Conference on Fuzzy Systems and Knowledge Discovery

FSKD 2012 Table of Contents

Preface.....	iii
Keynote Lectures.....	iv
Organizing Committee.....	x
Program Committee	xi
Reviewers.....	xiii

Fuzzy Theory and Algorithms

Fuzzy Theory and Models

$(\in, \in \vee qk)$ -Fuzzy Congruence in Residuated Lattices <i>Yi Liu, Ya Qin.....</i>	1
A fuzzy fusion algorithm to identify the traffic states by the floating car data <i>Liyang Wei, Mingjun Li.....</i>	5
A method for the two-sided matching with scores <i>Qi Yue.....</i>	10
A New Approach of Semiregular Compactness in L-topological Spaces <i>Bo Chen.....</i>	14
A Novel Fuzzy Supervised Learning Method with Dynamical Parameter Estimation for Discriminant Analysis <i>Xiaoning Song, Xibei Yang, Zi Liu, Xiangnan Ding.....</i>	18
A Quantitative Algorithm for Extracting Generic Basis of Fuzzy Association Rules <i>Ines Ben Ali Sougui, Minyar Sassi Hidri, Amel Grissa Touzi.....</i>	23
Adaptive Fuzzy Control of MIMO Non-linear System with Dead Zone Compensation <i>Yanbo Xue, Hui Xiong.....</i>	28
An Adaptive Learning Method with Dynamic Error Transfer Factor for Batch Processes Modeling <i>Liquan Zhang, Tianhui Zhou, Zhixin Chen.....</i>	34

FSKD Invited Session: Data Modelling and Network Analysis

A Distributed SVM Ensemble for Image Classification and Annotation <i>Nasullah Khalid Alham, Maozhen Li, Yang Liu, Man Qi</i>	1581
An Efficient Discrete Artificial Bee Colony Algorithm for Total flowtime Lot-streaming FlowShop <i>Hongyan Sang, Junhua Duan</i>	1585
Classification of Operating States for Decision Making in Power Systems Control with Feature Selection based on Mutual Information <i>Ioana Pisica, Gareth Taylor</i>	1589
Mobile Message-Aware Enhancement using Fuzzy Lattice Reasoning <i>Ghaidaa Al-sultany, Maozhen Li, Sadqat Jan, Hamid Al-raweshidy</i>	1594
Optimization of Transmission Spatial Layer Selection with Unreliable RI in MIMO-OFDM Systems <i>Weidong Zhang, Ying Wang, Maozhen Li, Mingyue Xu</i>	1598
Optimized Computing of Parameters for Functional Regression in Data Mining <i>Peter Krammer, Ladislav Hluchy</i>	1603

Information Technology for Knowledge Discovery

Data Engineering

A Novel Efficient Database Encryption Scheme <i>Zhou Xing, Liu Jun</i>	1610
An Implementation of AES Algorithm Based on FPGA <i>Wei Wang, Jie Chen, Fei Xu</i>	1615
An improved Particle Filter for target tracking with IRST System <i>Xiaomin Chen, Wei Xu, Xiaoning Fu</i>	1618
Closed Cube Computation on Multi-core CPUs <i>Hua Luan, Mingquan Zhou, Yan Fu, Xuesong Wang</i>	1622
Computing Approximate Joins of Relations Based on Entity Chains <i>Bo Liu</i>	1627
Detecting Global Outliers from Large Distributed Databases <i>Ji Zhang, Jie Cao, Xiaodong Zhu</i>	1632
Image Features Extraction from Rustic Villa Photos <i>Wei Xu, Xiaomin Chen, Xiaoning Fu</i>	1637
Mining Community in Social Network using Call Detail Records <i>Zhiwen Hu, Xianming Wang, Ke Xu</i>	1641
Research of the Conceptual Representing of Documents based on Light Ontology <i>Haoming Wang, Ye Guo, Jianting Li, Xibing Shi</i>	1646