

**The 2009 International Joint Conference
on Computational Sciences and
Optimization
(CSO 2009)**

Conference Program



**Sanya, Hainan, China
April 24-26, 2009**

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Welcome from the CSO 2009 General Chairs

Welcome to Sanya and to the 2009 International Joint Conference on Computational Sciences and Optimization (CSO 2009), held at the Yuhai International Resort (Sanya, Hainan, China), April 24-26, 2009.

Computational Sciences and Optimization are two important disciplines in modern sciences concerned with many areas ranging from engineering, management, finance, and economics, to arts and humanities. Currently some new challenges arise in the modeling of complex systems, sophisticated algorithms, advanced scientific and engineering computing and associated (multidisciplinary) problem-solving environments. Because the solution of large and complex problems must cope with tight timing schedules, powerful computational algorithms and complex optimization techniques are inevitable for solving some practical problems.

The main purpose of CSO 2009 is to bring together researchers, developers, practitioners, and users of applied computing, computational science, optimization theory, methods and techniques to present, discuss and exchange ideas, results and experiences in the fields of computational sciences and optimization for problems in science, engineering and inter-disciplinary applications. This joint conference provides an international forum for academic researchers and industry practitioners in the field of computational sciences and optimization from universities throughout the world to practitioners from industry to share cutting-edge information, to address current hottest issues, and to explore new modeling approaches and future alternative solutions.

This year we received 1288 submissions including 898 submissions in main-track conference and 390 submissions in eleven workshops from 28 countries and regions. All submitted papers went through a rigorous reviewing process. Every submission was reviewed by at least two independent reviewers in a standard peer-review process. Papers belonged to three categories: regular papers of 5 pages, short papers of 4 pages and poster papers of 3 pages. According to the results of peer-review, 477 papers are finally accepted by the conference and the acceptance rate of the conference was 37.03% (477 papers accepted out of 1288 submissions).

CSO 2009 would not have been successful without the support of many people and organizations. First and foremost, we would like to thank all the authors for submitting their papers to the conference, for their presentations and discussions during the conference. We would like to express our gratitude to Program Committee members and reviewers, who carried out the most difficult work by carefully evaluating the submitted papers. We would like to give special thanks to the conference sponsors. This year, CSO 2009 is co-sponsored by Faculty of Business of City University of Hong Kong; System Engineering Society of China (SESC), China; International Institute for Decision Sciences (IIDS), Hong Kong; Key Laboratory of Management, Decision and Information Systems (MADIS), Chinese Academy of Sciences (CAS), China; Center for Forecasting Science (CEFS), CAS, China; Institute of Intelligent Information and

Communications Technology (IICT), Konan University, Japan; and Decision Sciences Society of China (DSSC), China. Their sponsorships support the success of conference.

CSO 2009 has marked an important shift in the number of submissions received and in attracting a larger audience of researchers. This year, CSO 2009 has two international symposiums: The 2009 International Symposium on Applied Computing and Computational Sciences (ACCS 2009) and The 2009 International Symposium on Optimization Theory, Methods and Applications (OTMA 2009). In conjunction with ACCS 2009 we have 11 Workshops that complemented CSO 2009 program with contributions for specific topics. We would like to thank all workshops chairs for their excellent work in organizing these workshops.

We would like to express our gratitude to Juan Guerrero of IEEE Computer Society Press for all the support and help related to the production of this important scientific work. CSO 2009 conference used EasyChair Conference System and the system developer, Andrei Voronkov's support is much appreciated.

Finally, we would like to thank all conference participants for their contribution and support. Do hope all participants took this opportunity to share and exchange ideas with one another and enjoy CSO 2009.

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Plenary Speakers



Multiobjective Optimization Approach to Multiclass Support Vector Machines

Prof. Tetsuzo Tanino

Division of Electrical, Electronic and Information Engineering
Osaka University, Japan

Abstract

Support vector machines (SVMs) were originally proposed for the binary classification. They aim to maximize the so-called geometric margins between two classes of data. Recently some kinds of extensions of SVMs to multiclass classification have been proposed. In this paper, we focus on an all together method, which constructs an appropriate classifier by solving only one optimization problem. Since there exists several pairs of classes in the multiclass classification, this problem should be formulated naturally as a multiobjective optimization problem. However, the existing model is a simple extension of the ordinary two-class SVM with an intuitive aggregated objective function and has some drawbacks.

Therefore, in this paper, we will propose SVM models for multiclass classification based on the geometric margins. First we assume that data points are piecewise linearly separable and propose a basic hard margin multiobjective multiclass SVM model. Though the original problem is rather complicated and difficult to solve directly, we show that some Pareto optimal solutions can be obtained by solving a derived second order cone programming problem.

Moreover we also propose a soft margin multiobjective multiclass SVM by introducing margin slack variables. This model enables us to deal with more general multiclass pattern classification problems including noises and outliers.

A number of both theoretical and computational results will be described.

One-Minute Short Introduction

Tetsuzo Tanino is a Professor of the Division of Electrical, Electronic and Information Engineering at Osaka University in Japan. He received his Ph.D. in applied mathematics and physics from Kyoto University, Japan in 1978. He was an associate professor of Tohoku University, Japan from 1979 to 1988 and was a professor of Okayama University, Japan from 1989 to 1996. He has been working for Osaka University as a professor since 1996. He also worked for the International Institute for Applied Systems Analysis (IIASA) in Austria as a research scholar from 1985 to 1986. He is now the co-chairman of the steering committee of Sino-Japanese Optimization Meeting.



Monotone Operators: Convex Representations, Surjectivity Theorems and Extensions

Prof. Juan Enrique Martínez-Legaz

Department of Economics and Economic History
Autonomous University of Barcelona, Spain

Abstract

Convex representations of monotone operators have become a useful tool in the study of monotonicity. In this talk I will recall some basic facts on such representations and will present some generalizations of Rockafellar's surjectivity theorem and related results, which consist in replacing the duality mapping by another maximal monotone operator satisfying suitable conditions. Some extensions to so-called q -positive sets will also be discussed.

One-Minute Short Introduction

Juan Enrique Martínez Legaz is a professor at the Department of Economics and Economic History at the Autonomous University of Barcelona in Spain. He received his Ph. D. in Mathematics from the University of Barcelona in 1981. He is the Editor-in-Chief of the journal *Optimization* and is a member of the editorial boards of a few other journals, including the *Journal of Convex Analysis*, the *Journal of Global Optimization*, *TOP*, *Set-valued and Variational Analysis: Theory and Applications*, and the *International Journal of Optimization: Theory, Methods and Applications*.



Exact Penalty Functions Method for Mathematical Programming Problems involving Generalized Invex Functions

Dr. Shashi Kant Mishra

Department of Mathematics
Banaras Hindu University, Varanasi, India

Abstract

In this paper, we present some new results on the exact penalty function method. Very simple optimality characterizations are given for the differentiable nonconvex constrained optimization problems via exact penalty function method. The equivalence between sets of optimal solutions in the original problem and its associated exact penalized optimization problem is established under suitable generalized invexity assumptions. Moreover, the equivalence between a saddle point in the nonconvex original problem and an optimal solution for the exact penalized optimization problem is also proved.

One-Minute Short Introduction

Shashi Kant Mishra is a Reader in the Department of Mathematics, Banaras Hindu University, Varanasi, India. He received his Ph. D. in Applied Mathematics from Banaras Hindu University, Varanasi in 1995. He was an Associate professor of G. B. Pant University of Agriculture and Technology, Pantnagar, India. He has worked as a Research Fellow at City University of Hong Kong during 2005-2007. He is author of three books in Springer-Verlag and Managing editor of International Journal of Optimization: Theory, Methods and Applications as well as Associate Editor of International Journal of Operations Research, Taiwan and Analele Universitatii din Bucuresti Seria Matematica, University of Bucharest, Romania.



Virtualization Technology for Computing System: Opportunities and Challenges

Prof. Hai Jin

School of Computer Science and Technology
Huazhong University of Science and Technology, China

Abstract

Virtualization technology (VT) being a re-emerging technology has become a hot topic in recent years. It is a decoupling technique that separates system software from hardware platform while making applications run pervasively. Many academic institutes and research labs from industries have devoted great research efforts in various aspects. In 2007, Chinese Ministry of Science and Technology initialized a basic research project (973 project) with 6 universities and 2 research institutes on virtualization technology for computing system in many topics, such as architecture design philosophy of virtualization technology, VT design for single computing system, VT design for multiple computing systems, user environment for VT, security, reliability and trust issue related to VT, and performance evaluation and benchmarks for computing system with VT. In this talk, we will give insight for this project in details, including its motivation, goal, and research issue etc. Some preliminary research results with this project will also be illustrated.

One-Minute Short Introduction

Hai Jin is a Professor of Computer Science and Engineering at the Huazhong University of Science and Technology (HUST) in China. He is now the Dean of School of Computer Science and Technology at HUST. He received his Ph.D. in computer engineering from HUST in 1994. In 1996, he was awarded German Academic Exchange Service (DAAD) fellowship for visiting the Technical University of Chemnitz in Germany. He worked for the University of Hong Kong between 1998 and 2000 and participated in the HKU Cluster project. He worked as a visiting scholar at the University of Southern California between 1999 and 2000. He is the chief scientist of the largest grid computing project, ChinaGrid, in China.

Dr. Jin is a senior member of IEEE and member of ACM. He is the member of *Grid Forum Steering Group* (GFSG). He is the associated editor of *Parallel Computing*, *International Journal of Computer and Applications*, *International Journal of Grid and Utility Computing*, *International Journal of Web and Grid Services*, *Journal of Autonomic and Trusted Computing*, *Journal of Ubiquitous Computing and Intelligence*, *Journal of Computer Science and Technology*, *Frontiers of Computer Science in China*. He is IASTED technical committee member on *Parallel & Distributed Computing and Systems*. He is the steering committee chair of *International Conference on Grid and Pervasive Computing (GPC)*, *Asia-Pacific Services Computing Conference (APSCC)*. He is the steering committee member of *IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid)*, *IFIP International Conference on*

Network and Parallel Computing (NPC), International Conference on Grid and Cooperative Computing (GCC), International Conference on Autonomic and Trusted Computing (ATC), International Conference on Ubiquitous Intelligence and Computing (UIC), and served as program chair of *GCC'04, SCC'05, HSI'05, NPC'05, UISW'05, UIC'06, FCST'06, and ICA3PP'07,* program vice-chair of the *CCGrid'01, PDCAT'03, NPC'04, EUC'05, e-Science'05, AINA'06, and CCGrid'06.* He served as conference chairs of *ATC'06, UASS'07, HICA'07, and NPC'07.* He also served as program committee for more than 200 international conferences/workshops. He has co-authored 15 books and published over 300 research papers. His research interests include computer architecture, cluster computing and grid computing, virtualization technology, peer-to-peer computing, network storage, network security. Contact him at hjin@hust.edu.cn.



Exploiting Computing Power from Underlying Architectures

Prof. Yingwen Song

National Institute of Advanced Industrial Science and Technology
(AIST), Japan

Abstract

Though HPC (High Performance Computing) is mature enough for people to apply it in many fields ranging from bio-science to financial science. It is hard to say that application developers can use HPC technology efficiently. The most challenging issue in HPC is the development of applications utilizing the characteristics of platforms due to the wide varieties of computer architectures. Therefore, we will focus this talk on how to solve this most pressing problem. We start with writing applications to take advantage of the hierarchical structure of memory for conventional scalar CPUs, present some key points in developing coarse-grained OpenMP applications for Multi-core processors and SMPs (Symmetric Multi-Processing machines), and highlight the strategies to achieve load balance and to minimize the communication latency for MPI applications on cluster-based machines. These days, scientists are pursuing computational power from novel parallel architectures like CBE (Cell Broadband Engine) and CUDA (Compute Unified Device Architecture). We then, in the second part, will present our experience on optimization of applications for CBE and CUDA platforms, attempt to compare their merits and difficulties. Since Grid is becoming an important platform for some ultra-scale applications, the last part of this talk is dedicated to grid computing. We will begin this part by discussing the problems of MPI-based grid-enablement, and then introduce a WSRF-compatible framework to support GridRPC-based fault-tolerable grid-enablement, and finally illustrate a case study performed on TeraGrid. We will close this talk by an outlook to future research directions related to high performance computing.

One-Minute Short Introduction

Dr. Yingwen Song is a research scientist at AIST, Japan. He received his Ph.D. from Saitama University, Japan in 1999. Before he joined AIST, he had been working as a HPC researcher at INRIA, France and The University of Tokyo, Japan. He also has over 3 years industrial experience in developing, parallelizing, and tuning applications. His research interests cover a wide range, particularly include porting and tuning of HPC applications, the use of novel and advanced-computer architectures, grid computing, as well as middleware development. He has contributed over 50 technical papers to various conferences and refereed journals.



Efficiency Losses of Various Equilibria in Traffic Networks

Prof. Hai-Jun Huang

School of Economics and Management
Beijing University of Aeronautics and Astronautics, China

Abstract

It is generally believed that every driver's routing strategy is to maximize his own benefit displayed by choosing the shortest or cheapest path. This selfishly traffic routing is typically a non-atomic congestion game and finally results in a user equilibrium (UE) in which nobody could get a little more benefit by unilaterally changing his route. On the other hand, the system optimal (SO) assignment assumes that all drivers follow the instructions in all route choices by a certain central organization for minimizing the total travel cost or maximizing the total social welfare over the entire network. This traffic routing can be regarded as a fully cooperative game. One of the purposes of developing the Intelligent Transportation Systems (ITS), is to drive the UE flow pattern to a SO flow pattern although the SO is recognized to be hard to realize in reality, since the UE's efficiency loss is generally larger than the SO's in terms of the network performance. A question arises naturally: how large potentials can be exploited from pursuing the SO? In this talk, we investigate the upper bounds of the efficiency loss caused by UE traffic assignment with fixed demand. We also derive the upper bound of the cost inefficiency of a stochastic UE flow pattern with Advanced Traveler Information Systems (ATIS) market penetration, where the equipped drivers have less degree of travel time variability than the unequipped ones.

One-Minute Short Introduction

Hai-Jun Huang is a professor of transportation planning and management at Beijing University of Aeronautics and Astronautics (BUAA). He is now the dean of the BUAA's School of Economics and Management. He received his Ph.D. in transport operations research from BUAA in 1992. His research interests include road traffic flow models, transport network modeling, travel behavior analysis and congested road-use pricing. He has published more than 80 papers in such international journals as Transportation Research Part A, Part B, Part E, EJOR, Physical Review E, Physical A and etc. He is now leading a Group for Innovative Research supported by the National Natural Science Foundation of China.



Optimization of Performance and Networks Design for Multi-traffic Communications

Prof. Wuyi Yue

Department of Intelligence and Informatics
Konan University, Japan

Abstract

To maximize revenues while at the same time to provide the required quality of service (QoS) of multi-traffic communications is the ultimate goal of every network manager. Traffic engineering in communication networks is a process of controlling traffic demand in a network so as to optimize resource utilization and network performance by considering traffic characteristics and the impact of traffic control mechanisms. There are two forms of traffic engineering: online planning and offline planning. While online traffic engineering focuses on instantaneous network states and individual connections, offline traffic engineering simultaneously examines each channel's resource constraints by a centralized view.

In online traffic engineering, we usually want to know which network protocol gives the best delay throughput characteristic under specified conditions, what is the minimum transmission delay or the maximum network utilization with appropriate choice of QoS, and so on. Analytical techniques are computationally efficient techniques to evaluate the performance of networks. To analyze, evaluate, improve and optimize system performance, queueing theory and Markov chains are commonly used. However, in next generation multi-traffic communication networks, several different types of traffic arising from voice, data and video services are statistically multiplexed over the network links with user's random demand for fixed and mobile users. To satisfy the huge wireless multimedia service demand and improve the system performance, efficient channel access methods and analytical performance methods for real-time bursty traffic (such as voice or video) and data traffic with excellent reliability and service quality simultaneously must be provided.

On the other hand, in the offline traffic engineering, optimization problem was formulated as a deterministic multi-commodity flow model with the objective to minimize the network cost subject to capacity constraints on the resource for servicing traffic demand with a set of commodities through the network. Since these involve networks and optimization to control traffic demand in communication networks as to optimize resource utilization and network performance, they are sometimes called network optimization problems. Now, new network design problems arise to require the application of optimization methods of network design problems for multi-traffic communications by taking new objective functions reflecting the character of multi-traffic communications.

The purpose of our research in this presentation is related to performance optimization and optimization of networks design in multi-traffic communication networks with delay throughput characteristic for the online traffic engineering. Important performance measures of delay throughput characteristic in multi-traffic communication networks are throughput, packet delay

and response time for different types of traffic (real-time bursty traffic and data traffic). In this presentation, an admission control scheme with reserved channels for real-time bursty traffic to give better service qualities in the whole system is designed. And a queue model is proposed to study the performance of this multi-traffic admission control scheme, which is based on the running mechanism of the multi-channel communication network and the various qualities of service (QoS) requirements of multi-traffic. Using matrix geometric solution method, we give the exact performance measures, such as, utilization of channel for both types packets, blocking probability of voice packets, the queue length and the delay time of data packets.

The presentation should prove useful to both practitioners and researchers concerned with multimedia communication and computer network performance evaluation.

One-Minute Short Introduction

Dr. Wuyi Yue received her B.Eng. degree in electronic engineering from Tsinghua University, China, and the M.Eng. and Dr. Eng. degrees in applied mathematics and physics from Kyoto University, Japan. She was a researcher and a chief researcher of ASTEM RI, an associate professor of Wakayama University, an associate professor and a professor at the Department of Applied Mathematics, and a professor at the Department of Information Science and Systems Engineering, Konan University, Japan. She is currently a professor at the Department of Intelligence and Informatics, Konan University, Japan. She is also the director of Institute of Intelligent Information and Communications Technology, Konan University. Dr. Yue is a member of the IEEE, the IEICE, the System Engineers Society of China, and the Operations Research Society of China, International Society for Mathematical Sciences and a fellow of the Operations Research Society of Japan. Dr. Yue's research interests include queueing theory, stochastic processes and optimal methods as applied to system modeling, performance analysis and evaluation, performance optimizations and optimal resource allocation of wired and wireless/mobile communication networks (including mobile cellular, multi-hop, multi-traffic mobile communication networks), multimedia communication networks, traffic systems, stochastic systems, information systems, systems engineering, economic analysis and evaluation, and operations research, Markov process. Dr. Yue is an author or a co-author (a co-editor) of monographs published by Kluwer Academic Publishers, Springer and other Publishers, and refereed papers published in international journals and international conference proceedings such as IEEE Transactions on Communications, IEEE Journal on Selected Areas in Communications, IEEE Transactions on Vehicular Technology, Journal of Computer and Communication, Journal of International Trans. in Operational Research, Journal of Telecommunication Systems, IEICE Transactions on Communications, IEICE Trans. On Fundamentals of Electronics, Communications and Computer Sciences, Journal of Optimization and Engineering, Journal of Industrial and Management Optimization and other top international journals in the related fields.

Conference Schedule

April 23, 2009	April 24, 2009	April 25, 2009	April 26, 2009
13:00-18:30 Registration	8:30-18:00 Registration	8:30-11:30 Registration	
	9:00-9:30 Opening Session	8:30-9:20 Keynote Speech	8:30-10:30 Session A5, B5, C5
	9:30-10:20 Keynote Speech	9:20-10:10 Keynote Speech	
	10:20-10:30 Coffee/Tea Break	10:10-10:20 Coffee/Tea Break	10:30-10:40 Coffee/Tea Break
	10:30-11:20 Keynote Speech	10:20-11:10 Keynote Speech	10:40-12:00 Session A6, B6, C6
	11:20-12:10 Keynote Speech	11:10-12:00 Keynote Speech	
	12:10-13:30 Lunch/Rest	12:00-13:30 Lunch/Rest	12:00-13:30 Lunch/Rest
	13:30-15:50 Session A1, B1, C1	13:30-15:50 Session A3, B3, C3	14:00-17:00 Free Tour & Dismiss
	15:50-16:00 Coffee/Tea Break	15:50-16:00 Coffee/Tea Break	
	16:00-18:20 Session A2, B2, C2	16:00-18:40 Session A4, B4, C4	
	18:30-21:00 Supper	18:30-21:00 Supper	19:00-21:30 Seafood Banquet

Notes:

1. Conference Venue Arrangement	
Opening/Keynote Session:	Multi-purpose conference hall, Conference Building
Parallel Session A:	# 1, Conference Building
Parallel Session B:	# 2, Conference Building
Parallel Session C:	# 3, Conference Building
2. Conference Lunch/Supper and Banquet Arrangement	
Lunch/Supper:	Chinese Restaurant, Yuhai International Resort
Banquet:	Ocean Side of China South Sea (go by bus)
3. All participants enter into the restaurant by Lunch/Dinner tickets and Banquet tickets issued by the Conference Organizer.	

April 24, 2009 (Friday)

9:00-9:30	Opening Session (Chair: Dr. Lean Yu)
	Opening Address (Prof. K.K. Lai, General Co-Chair) Best Workshop Organization Award
9:30-10:20	Keynote Speech (Chair: Prof. K.K. Lai)
	Speaker: Prof. Tetsuzo Tanino (Osaka University, Japan) Title: Multiobjective optimization approach to multiclass support vector machines
10:20-10:30	Coffee/Tea Break
10:30-12:10	Keynote Speech (50m/P)(Chair: Prof. Sy-Ming Guu)
	Speaker: Prof. Juan Enrique Martinez-Legaz (Universitat Autònoma de Barcelona, Spain) Title: Monotone Operators: Convex Representations, Surjectivity Theorems and Extensions
	Speaker: Prof. S.K. Mishra (Hindu University, India) Title: Exact Penalty Functions Method for Mathematical Programming Problems involving Generalized Invex Functions
12:10-13:30	Lunch
13:30-15:50	Session A1: High Performance Computing (20m/P)(Chair: Prof. Yoshiyuki Kawazoe)
Session A1	Title: A Dynamic Solution for Efficient MPI Collective Communications (IWHGA09-17) Authors: Hyacinthe Nzigou Mamadou, Feng Long Gu, Vivien Oddou, Takeshi Nanri, Kazuaki Murakami
	Title: Personalized Information Recommendation Model Based on Semantic Grid (IWHGA09-40) Authors: Yusheng Sun, Hui Dong
	Title: A RSSI Based Localization Algorithm Using a Mobile Anchor Node for Wireless Sensor Networks (ID: 222) Authors: Yuan Zhu, Baoli Zhang, Fengqi Yu, Shufeng Ning
	Title: Scaling the Performance of Tiled Processor Architectures with On-Chip Network Topology (ID: 519) Authors: Yongqing Ren, Hong An, Ming Cong, Guang Xu, Li Wang
	Title: GAP/D: VLSI Hardware for Parallel and Adaptive Distributed Genetic Algorithms (ID: 706) Authors: Kazutaka Kobayashi, Norihiko Yoshida, Shuji Narazaki
	Title: Type-based Service Ontology, Service Description in Pervasive Computing (ID: 412) Authors: Yongzhi Yang, Dianxi Shi, Peng Zou
	Title: An Adaptive Energy-Efficient Clustering Protocol for Data Collection in Sensor Networks (ID: 619) Authors: Zusheng Zhang, Fengqi Yu
13:30-15:50	Session B1: Engineering Computing & Application (20m/P)(Chair: Prof. Jinlou Zhao)
Session B1	Title: A Float Code Genetic Algorithm Based on Orthonormal Multiwavelet Denoising Mutation (ID: 48) Authors: Mingyi Cui

	<p>Title: Numerical Simulation of Nonlinear Fracture Failure Process of Frozen Soil (ID: 642)</p> <p>Authors: Yuedong Wang, Bingzhi Chen, Chungue Nie</p>
	<p>Title: Numerical Analysis of Friction Lining's Temperature Field during Helically Sliding Contact with Wire Rope (ID: 408)</p> <p>Authors: Yuxing Peng, Zhencai Zhu, Guoan Chen, Jiusheng Bao</p>
	<p>Title: Ultimate Strength and Parametric Analysis of T-/π- Joints in SHS sections (ID: 453)</p> <p>Authors: Jianchun Xiao, Jinfang Liu, Hao Xu, Kejian Ma</p>
	<p>Title: Modeling of Neuron Based on Single Electron Transistor (ID: 696)</p> <p>Authors: Peng Qiu, Guanglong Wang, Jianglei Lu, Shuang Feng</p>
	<p>Title: Self-fulfillment of Expectation in a Country Fair Model (ID: 639)</p> <p>Authors: Jing Deng, Honggang Li</p>
	<p>Title: Supply Chain Risk Measurement and Transmission Based on Products Pricing (ID: 380)</p> <p>Authors: Yonghong Li, Lindu Zhao</p>
13:30-15:50	Session C1: Computational Mathematics and Intelligent Computing (20m/P) (Chair: Prof. Tetsuzo Tanino)
Session C1	<p>Title: New Family of Combined Iterative Methods for Solving Nonlinear Equations (ID:295)</p> <p>Authors: Shuping Chen, Fabao Gao, Wei Zhang, Minghui Yao</p>
	<p>Title: A New Optimization Model for the Construction of Markov Chains (ID: 332)</p> <p>Authors: Wai-Ki Ching, Yang Cong</p>
	<p>Title: Static Output Feedback Robust Stabilization: A Gradient Iterative LMI Approach (ID: 64)</p> <p>Authors: Dongsheng Zou, Longhua She, Wensen Chang</p>
	<p>Title: Fundamentals and Design of Smart Home Middleware (ID: 237)</p> <p>Authors: My Chau Tu, Dongil Shin, Dongkyoo Shin, Jonghwa Choi</p>
	<p>Title: A Distributed Collaborative Control Scheme Based on Multi-Immune Agent (ID: 287)</p> <p>Authors: Xiang-feng Zhang, Zhao-xia Liang, Yong-sheng Ding</p>
	<p>Title: New Crossover Operator of Genetic Algorithms for the TSP (ID: 494)</p> <p>Authors: Fanchen Su, Fuxi Zhu, Zhiyi Yin, Haitao Yao, Qingping Wang, Wenyong Dong</p>
	<p>Title: Towards an Emotion Recognition System based on Biometrics (ID: 385)</p> <p>Authors: Taehyun Kim, Dongil Shin, Dongkyoo Shin</p>
15:50-16:00	Coffee/Tea Break
16:00-18:20	Session A2: Hybrid Computing & Engineering Applications (20m/P)(Chair: Prof. Y.H.J. Fuh)
Session A2	<p>Title: Combining Neural Networks and Genetic Algorithms to Predict and to Maximize Lemon Grass Oil Production (ID: 217)</p> <p>Authors: K. K. Mishra, Brajesh Kumar Singh, Akash Punhan and Uma Singh</p>
	<p>Title: A Novel Hybrid PSO-BP Algorithm for Neural Network Training (ID: 350)</p> <p>Authors: Jun Liu, Xiaohong Qiu</p>
	<p>Title: Using Hybrid Particle Swarm Optimization for Process Planning Problem (ID: 590)</p> <p>Authors: Y.F. Wang, Y.F. Zhang and J.Y.H. Fuh</p>
	<p>Title: Dynamic Character and Aseismic Capacity of Chinese Ancient Buildings (ID: 601)</p> <p>Authors: Qian Zhou, Weiming Yan</p>
	<p>Title: An Integrated Method for Workspace Computation of Robot Manipulator (ID: 615)</p> <p>Authors: Yi Cao, Suiping Qi, Ke Lu, Yi Zang, Guanying Yang</p>

	<p>Title: Damage Analysis on a Chinese Ancient Building by Wenchuan Earthquake (ID: 606)</p> <p>Authors: Qian Zhou, Weiming Yan</p>
	<p>Title: Combination Forecasting Model Based on Drift (CMEE-18)</p> <p>Authors: Meijuan Li, Guohong Chen, Zhibing Lin, Binqing Cai</p>
16:00-18:20	Session B2: Computational Economics & Finance (20m/P)(Chair: Dr. Aihua Li)
Session B2	<p>Title: Stylized Facts in Different Dynamic Regimes of a Agent-based Artificial Stock Market (ID: 516)</p> <p>Authors: Tongkui Yu, Mingyu Yuan, Honggang Li</p>
	<p>Title: Fuzzy Linear Programming Model to Solve Two-Person Zero-Sum Matrix Game with Fuzzy Payoffs (ID: 694)</p> <p>Authors: Lin Xu, Xiaobin Wang</p>
	<p>Title: Dependence Analysis of Diversification Benefits of Chinese Real Estate Securities (ID: 878)</p> <p>Authors: Xunfa Lu, Kin Keung Lai</p>
	<p>Title: An Intelligent Optimization Algorithm for Demand Fulfillment and ATP in Advanced Planning System (ACCS-15)</p> <p>Authors: Xiaoqing Zeng, Haiyan Xiao, Ning Liu</p>
	<p>Title: Computation and Comparative Study of PIR and HAI with Demonstration Analysis in Beijing (ID: 836)</p> <p>Authors: Aihua Li, Jun Liu</p>
	<p>Title: A Statistical Neural Network Approach for Value-at-Risk Analysis (BIBI-010)</p> <p>Authors: Xiaoliang Chen, Kin Keung Lai, Jerome Yen</p>
	<p>Title: Simulated Annealing Based Rule Extraction Algorithm for Credit Scoring Problem (BIBI-011)</p> <p>Authors: Gang Dong, Kin Keung Lai, Ligang Zhou</p>
16:00-18:20	Session C2: Data Analysis & KDD (20m/P)(Chair: Prof. Lingling Zhang)
Session C2	<p>Title: A Kind of R-Complete Category for R-Posets (ID: 643)</p> <p>Authors: Li-gang Wu , Lei Fan, Yang Gao</p>
	<p>Title: Online Scheduling of Flexible Flow Shop Manufacturing (ID: 845)</p> <p>Authors: Wei Weng, Shigeru Fujimura</p>
	<p>Title: Data Pre-Processing for More Effective Gene Clustering (ID: 152)</p> <p>Authors: Jingyu Hou, Yi-Ping Phoebe Chen</p>
	<p>Title: Efficient Computation of Reverse Skyline on Data Stream (ID: 785)</p> <p>Authors: Ling Zhu, Cuiping Li, Hong Chen</p>
	<p>Title: A Way to Implement Intelligent Knowledge Push in Knowledge Management System (ID: 890)</p> <p>Authors: Lingling Zhang, Guangli Nie, Yuejin Zhang, Ying Wang, Yong Shi</p>
	<p>Title: A Comparative Analysis of Telecommunications Restructure Effects in China (DMTI-007)</p> <p>Authors: Aihua Zhang, Lixian Zhang</p>
	<p>Title: The Calibration Algorithm for 3D Color Laser Range Finder Measurement System (ID: 50)</p> <p>Authors: Henghai Fan, Ganhua Li, Li Dong</p>
18:30-20:30	Supper

April 25, 2009 (Saturday)

8:30-10:10	Keynote Speech (50m/P) (Chair: Prof. Haijun Huang)
	<p>Speaker: Prof. Jin Hai (Huazhong University of Science and Technology, China) Title: Virtualization Technology for Computing System: Opportunities and Challenges</p>
	<p>Speaker: Prof. Yingwen Song (National Institute of Advanced Industrial Science and Technology (AIST), Japan) Title: Exploiting Computing Power from Underlying Architectures</p>
10:10-10:20	Coffee/Tea Break
10:20-12:00	Keynote Speech (50m/P)(Chair: Prof. Yingwen Song)
	<p>Speaker: Prof. Haijun Huang (Beijing University of Aeronautics and Astronautics, China) Title: Efficiency Losses of Various Equilibria in Traffic Networks</p>
	<p>Speaker: Prof. Wuyi Yue (Konan University, Japan) Title: Optimization of Performance and Networks Design for Multi-traffic Communications</p>
12:00-13:30	Lunch
13:30-15:50	Session A3: Advanced Data Mining & Application I (20m/P)(Chair: Dr. Wenqian Shang)
Session A3	<p>Title: Security Analysis of Poker-Resembled Protocol Based on Hidden Number Problem (DMAA-02) Authors: Dong Su, Ke-wei Lv</p>
	<p>Title: Fuzzy Clustering with Improved Artificial Fish Swarm Algorithm (DMAA-06) Authors: Si He, Nabil Belacel, Habib Hamam, Yassine Bouslimani</p>
	<p>Title: A Study of Parallel FDTD Method on High-Performance Computer Clusters (DMAA-12) Authors: Zengrui Li, Limei Luo, Junhong Wang</p>
	<p>Title: Intelligent Decision-making System Based on Data Mining (DMAA-18) Authors: Wenqian Shang, Hongbin Dong, Haibin Zhu</p>
	<p>Title: Parallel Reducts in a Series of Decision Subsystems (DMAA-22) Authors: Dayong Deng, Jiyi Wang, Xiangjun Li</p>
	<p>Title: The Vehicle License Plate Location Method Based-on Wavelet Transform (DMAA-23) Authors: Weijuan Wen, Xianglin Huang, Lifang Yang, Zhao Yang, Pengju Zhang</p>
	<p>Title: The Temporal-Spatial Modeling of Vocabulary for Language Monitoring (DMAA-27) Authors: Wei He, Yu Zou, Yonglin Teng, Min Hou, Weibin Zhu</p>
13:30-15:50	Session B3: Service Computing & Optimizations (20m/P)(Chair: Dr. Ning Shi)
Session B3	<p>Title: Flow-Based Supply Chains (ACSSCM-01) Authors: Sabah Al-Fedaghi</p>
	<p>Title: A Dynamic Stochastic Network Model for Asset Allocation Problem (ACSSCM-02) Authors: Haiqing Song, Huei-Chuen Huang, Ning Shi, K. K. Lai</p>
	<p>Title: A Survey on Vehicle Routing Problem with Loading Constraints (ACSSCM-03) Authors: Fan Wang, Yi Tao and Ning Shi</p>
	<p>Title: A Lagrangian Relaxation Approach for Unit Commitment with Stochastic Disruption Management (ID: 562) Authors: Ping Che, Lixin Tang</p>
	<p>Title: Hybrid Scatter Search and Tabu Search for the Mother Plate Design Problem in the Iron and Steel Industry (ID: 461) Authors: Yongyue Zheng, Lixin Tang</p>

	<p>Title: Analysis of a Heuristics for Scheduling Two-Stage Hybrid Flow Shop (ID: 367) Authors: Xie Xie, Lixin Tang</p>
	<p>Title: Local Search Heuristic for Multiple Objective Coil Scheduling Problem on Unrelated Parallel Machines (ID: 703) Authors: Yang Yang , Lixin Tang</p>
13:30-15:50	Session C3: Computational Transportation Science I (20m/P) (Chair: Dr. Qiong Tian)
Session C3	<p>Title: The Distribution Characteristic of Travel Time Reliability in Beijing Road Network (CTS-001) Authors: Huimin Wen , Xuejie Liu, Yong Gao</p>
	<p>Title: Synchronized Traffic Flow and Metastable States from the Perspective of Constant Time Headway (CTS-003) Authors: Rui Jiang, Katsuhiko Nashinari</p>
	<p>Title: The Evaluation Method of Road Network Connectivity Reliability Based on Key Segments Identification (CTS-004) Authors: Xuejie Liu, Huimin Wen, Yong Gao</p>
	<p>Title: Cell Size: An Important Factor for Modeling Bottleneck Traffic in Cellular Automata Model (CTS-006) Authors: Xingang Li, Ziyou Gao, Bin Jia</p>
	<p>Title: Optimum Modeling and Computation for Lane-Based Route Choice (CTS-009) Authors: Shaokuan Chen, Liping Gao, Mingjun Liu, Jifu Guo and Jinyi Guo</p>
	<p>Title: Simulation on Information Guidance in Regional Heavy Traffic Flow (CTS-010) Authors: Liping Gao , Mingjun Liu, Baohua Mao, Shaokuan Chen</p>
	<p>Title: A Turn-Based Algorithm for Solving the Logit Type Network Loading Problem (CTS-011) Authors: Gang Ren, Wei Wang</p>
15:50-16:00	Coffee/Tea Break
16:00-18:40	Session A4: Advanced Data Mining & Application II(20m/P)(Chair: Prof. Zhong Yao)
Session A4	<p>Title: The Organization and Application of Multimedia information Based on Ontology (DMAA-28) Authors: Pengzhou Zhang, Xiaogang Yang, Chi Zhang, Yang Li</p>
	<p>Title: Automatic Extraction of Spoken Word in Broadcast Media Language (DMAA-29) Authors: Yuqiang Zhang, Yu Zou, Wei He, Min Hou, Yonglin Teng</p>
	<p>Title: A Special Prosodic Phrasing in Broadcasting News Programs (DMAA-30) Authors: Yu Zou, Wei He, Yuqiang Zhang, Min Hou, Weibin Zhu</p>
	<p>Title: Automatic Target Recognition Based on Rough Set-Support Vector Machine in SAR Images (ID: 80) Authors: Wei Xiong, Lanying Cao</p>
	<p>Title: Distributed Polytope ARTMAP: A vigilance-free ART network for distributed supervised learning (ID: 252) Authors: Leonardo Liao, Yongqiang Wu</p>
	<p>Title: A Multi-objective Optimization Evolutionary Algorithm Addressing Diversity Maintenance (ID: 751) Authors: Xiaoning Shen, Min Zhang, Tao Li</p>
	<p>Title: Genetic Algorithm Application to a Production-Inventory Model of Imperfect Process with Deteriorating Items under two Dispatching Policies (ID: 864) Authors: Yu-Su Shen, June-Chung Sung, Dah-Chuan Gong</p>
	<p>Title: Item-based Clustering Collaborative Filtering Algorithm under High-Dimensional Sparse Data (ID: 321)</p>

	Authors: Zhong Yao, Quang Zhang
16:00-18:40	Session B4: Spatial Computational Sciences (20m/P)(Chair: Prof. Yuxin Zhao)
Session B4	Title: A Novel Calculation Approach for Helicopter Blades Forces (SCSA-05) Authors: Chengtao Cai, Zhuoyi Xing, Bo Wen
	Title: A Modified LOD Terrain Model Based on QuadTree Algorithm (SCSA-66) Authors: Yuxin Zhao, Yan Ma
	Title: Measurement Accuracy and Evaluation of Uncertainty Principle (SCSA-07) Authors: Jiudong Yang
	Title: Endpoint Triangle's Circumcircle Method in Delaunay Triangulation (SCSA-67) Authors: Yuxin Zhao, Fengmin Tian
	Title: Seabed Terrain Match Algorithm Based on Hausdorff Distance and Particle Swarm Optimization (SCSA-57) Authors: Gannan Yuan, Jialin Tan, Liqiang Liu, Yang Song
	Title: Efficacy Analysis of Countering ARM by Moving Baiting Source (SCSA-62) Authors: Zhen Shi, Ping Jiang, Haibo Liang, Ciyu Ji
	Title: Real-Time Obstacle Avoidance Method for Mobile Robots Based on a Modified Particle Swarm Optimization (SCSA-68) Authors: Yuxin Zhao, Wei Zu
	Title: A CAD System for Shoe Last Customization (ID: 129) Authors: Ning Shi, Shuping Xiong, Shuping Yi and Zuhua Jiang
16:00-18:40	Session C4: Computational Transportation Science II (20m/P) (Chair: Dr. Hu Shao)
Session C4	Title: The Automatic Recognition and Update Techniques about the Increment of the Road Network Data (CTS-020) Authors: Liyun Zhu, Xuejie Liu, Zhongwei Hu
	Title: Metropolitan Congestion Performance Measures Based on Mass Floating Car Data (CTS-022) Authors: Jianping Sun, Huimin Wen, Yong Gao, Zhongwei Hu
	Title: Modeling Time-dependent Travel Choice Problems in A Mixed-mode Network with Park-and-ride Facilities (CTS-025) Authors: Qiong Tian, Hai-Jun Huang, William H.K. Lam, Hui Mou
	Title: A Mixed Traffic Flow Model Based on a Modified Cellular Automaton in Two-Lane System (CTS-028) Authors: Jian-Xun Ding, Hai-Jun Huang, Qiong Tian
	Title: A Two-Stage Step Size Rule on Improved Prediction-Correction Method for Monotone Nonlinear Variational Inequalities (CTS-032) Authors: Hu Shao, Guodong Wang
	Title: Departure Time and Mode Choice for the Morning Commute in a Highway/Railway Network (CTS-030) Authors: Wen-Xiang Wu, Hai-Jun Huang
	Title: A Mixed Equilibrium Traffic Assignment Model for Transportation Networks with ATIS under Demand and Supply Uncertainties (CTS-031) Authors: Guodong Wang, Hu Shao, Dexin Cao
	Title: Sequential Experimental Approach for Congestion Pricing with Multiple Vehicle Types and Multiple Time Periods (CTS-035) Authors: Wei Xu, Hai Yang, Deren Han
19:00-21:30	Seafood Banquet at Ocean Side

April 26, 2009 (Sunday)

8:30-10:30	Session A5: Signal/Image Processing (20m/person) (Chair: Dr. Ligang Zhou)
Session A5	<p>Title: An Image Coding Approach Using Wavelet-Based Adaptive Contourlet Transform (ID: 15) Authors: Guoan Yang, Zhiqiang Tian, Chongyuan Bi, Yuzhen Yan</p>
	<p>Title: A Multi-stage Adaptive Binarization Scheme for Document Images (ID: 292) Authors: Jiang Duan, Mengyang Zhang, Qing Li</p>
	<p>Title: Extracting Color Using Adaptive Segmentation for Image Retrieval (ID: 803) Authors: Muhammad Riaz, Kim Pankoo and Park Jongan</p>
	<p>Title: Shadow Removal from Images using an Improved Single-Scale Retinex Color Restoration Algorithm (ID: 862) Authors: Kang Yao, Zhenbang Lu</p>
	<p>Title: Segment Clustering Radar Signal Sorting (ID: 886) Authors: Qiang Guo, Wei Xu, Changhong Wang, Di Guan</p>
	<p>Title: A Novel Image Fusion Method Based on Contourlet Decomposition (ID: 830) Authors: Min Li, Wei Cai, Xiao-yan Li, Yun Sun</p>
8:30-10:30	Session B5: Optimization Methods & Applications (20m/person) (Chair: Prof. Lin-Yu Tseng)
Session B5	<p>Title: An Adaptive Static Reanalysis Method for Structural Modifications Using Epsilon Algorithm (ID: 195) Authors: Zhijun Yang, Xin Chen, Robert Kelly</p>
	<p>Title: Multiple Trajectory Search for Uncapacitated Facility Location Problems (ID: 348) Authors: Lin-Yu Tseng, Chih-Sheng Wu</p>
	<p>Title: On Complex Minimax Programming Involving Generalized Univexity (ID: 518) Authors: S. K. Mishra, J. S. Rautela</p>
	<p>Title: An approximation algorithm for max k-uncut with capacity constraints (ID: 593) Authors: Salimur Choudhury, Daya R. Gaur, Ramesh Krishnamurti</p>
	<p>Title: On the max-quasi-arithmetic mean powers of a fuzzy matrix (ID: 389) Authors: Yung-Yih Lur, Yan-Kuen Wu, Kin Keung Lai and Sy-Ming Guu</p>
	<p>Title: Application of Response Surface Model and Kriging Model to ADI Lower Control Arm Optimization (ID: 727) Authors: Xue Guan Song, Kwon Hee Lee, Han Seok Park, Young Chul Park</p>
8:30-10:30	Session C5: Optimization and Logistics Management (20m/person) (Chair: Prof. Lindu Zhao)
Session C5	<p>Title: Resilience Evaluation Approach of Transportation Networks (RMEL-004) Authors: W.H. Ip, Dingwei Wang</p>
	<p>Title: Collaborative Research between Epidemic Diffusion Network and Emergency Rescue Network in Anti-bioterrorism System (RMEL-007) Authors: Jingjing Xu, Lindu Zhao, Haiyan Wang</p>
	<p>Title: A Branch-and-Price Algorithm for the Dynamic Inventory Slab Allocation Problem in the Steel Industry (ID: 533) Authors: Yongyue Zheng, Lixin Tang</p>
	<p>Title: Optimization of Goods Location Numbering and Storage and Retrieval Sequence in Automated Warehouse (ID: 378) Authors: Shuqin Wang, Lindu Zhao</p>
	<p>Title: Pedagogical Comments on “An Integrated Single-vendor Single-buyer Inventory System with Shortage Derived Algebraically” (ID: 282)</p>

	Authors: Kit-Nam Francis Leung
	Title: Heuristics of Scheduling a Single Crane in Batch Annealing Process (ID: 482) Authors: Xie Xie, Lixin Tang
10:30-10:40	Coffee/Tea Break
10:40-12:00	Session A6: Computational Applications (20m/person) (Chair: Dr. Jiansheng Wu)
Session A6	Title: A Neural Network Ensemble Prediction Model Based on MGF and PLS for Drought and Waterlogging Disasters in Short-range Climate (ICMA-01) Authors: Long Jin, Ying Huang
	Title: A Novel Artificial Neural Network Ensemble Model Based on K-Nearest Neighbor Nonparametric Estimation of Regression Function and Its Application for Rainfall Forecasting (ICMA-04) Authors: Jiansheng Wu
	Title: Decision Making Meteorological Services System Based on Geographic Information System (ICMA-09) Authors: Huanping Wu, Weijiang Zheng, Bing Luo, Zhongliang Lv, Wei Tang
	Title: The Comparison of Energy Consumption among the Sectors in Technological Progress Point Based on the Input-output Table (CMEE-04) Authors: Muhammad Riaz, Kim Pankoo and Park Jongan
10:40-12:00	Session B6: Computational & Optimization Applications I (20m/person) (Chair: Prof. S.K. Mishra)
Session B6	Title: Implementing Supervisory Mechanism in Software Engineering (ID: 407) Authors: Hui Ma, Nannan Hao, Yiping Yang
	Title: Modeling Multi-species Interacting Ecosystem by a Simple Equation (ID: 737) Authors: Jiang Zhang
	Title: Simplification of Numerical Rational Surfaces (ID: 500) Authors: Liyong Shen, Min Wu, Zhengfeng Yang
	Title: A Numerical Method for Solving a Class of Continuous-time Linear Fractional Programming Problems (ID: 307) Authors: Ching-Feng Wen, Yung-Yih Lur, Sy-Ming Guu
10:40-12:00	Session C6: Computational & Optimization Applications II (20m/person) (Chair: Prof. Jun Wu)
Session C6	Title: A Voting Statistical Method of Group Decision (ID: 63) Authors: Suhong Yang
	Title: Fault Diagnosis for Dynamic Nonlinear System Based on Kernel Principal Component Analysis (ID: 70) Authors: Jingjing Xu, Lindu Zhao, Haiyan Wang
	Title: Construction of Double Sampling Plans through Six Sigma Quality Levels (ID: 750) Authors: R. Radhakrishnan and P.K. Sivakumaran
	Title: Nesting in the Clothing Industry Using Semi-Discrete Representations (ID: 617) Authors: Chia-Cheng Liu
12:00-13:30	Lunch
14:00-17:00	Free Tour & Dismiss