6th Joint Conference on Information Sciences

MARCH 8–13, 2002 • RESEARCH TRIANGLE PARK, NORTH CAROLINA, USA

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Shu-Heng Chen, Chengchi University, ROC
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Richard Duro, Universidade da Coruña, Spain
Vasant Honavar, Iowa State University, USA
Etienne E. Kerre, Ghent University, Belgium
Mi Lu, Texas A&M University, USA
Manuel Grana Romay, Universidad del Pais Vasco, Spain
Timothy K. Shih, Tamkang University, ROC
Dan Ventura, Brigham Young University, USA
Paul P. Wang, Duke University, USA
Yuanyuan Yang, SUNY at Stony Brook, USA

Honorary Chairs:
Azriel Rosenfeld and Lotfi A. Zadeh

Advisors:
Howard Clark, Duke University
John Harer, Duke University
Kristina Johnson, Duke University
Azriel Rosenfeld, Duke University
James Siedow, Duke University
Lotfi A. Zadeh, UC, Berkeley

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For information on the 7th Joint Conference on Information Sciences, please visit our Web site at www.ee.duke.edu/JCIS
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Welcome

In many ways, the information sciences hold the key to furthering research. There really is “information” in molecules, just as there is in words. The research into the brain, mind, and behavior continues to be critically important. The huge communication demand provides a sense of urgency to photonic and networking research.

The 6th Joint Conference on Information Sciences (JCIS), being held March 8-13, 2002 in Research Triangle Park, North Carolina, USA, continues a decade-long tradition of offering cutting-edge scientific and technological presentations and discussion. The conference serves scientists, technologists, and high tech managers committed to multi-disciplinary research. JCIS is governed by the Board of Directors of the Association for Intelligent Machinery (AIM). This group is composed of distinguished researchers who believe strongly in achieving excellence in scientific research and technological development. JCIS places a major emphasis on topics not usually covered by IEEE, ACM, or other major professional societies. It was organized to complement the efforts of these organizations, not to duplicate their excellent programs and well-recognized contributions.

AIM believes that applying research on human or other biological creatures’ intelligence will result in better designed engineering systems and products. Understanding information processing inside or outside of the human brain is essential to the design process. Artificial intelligence research has been and will continue to play a significant role! The association is committed to bringing together isolated research communities, recognizing that researchers who work together synergistically can accomplish superior commercial products.

Over the years, JCIS has attracted outstanding scientists, engineers, and technology managers from around the world. The growing interest in JCIS is also evidenced by an increasing volume of pages published in the Information Sciences Journal — a tenfold increase since 1985.

The 6th JCIS has been organized by a slate of dedicated conference and workshop directors and program chairs. They are listed on page 1. We can't thank them enough for all their hard work and contributions to the conference.

Three major themes have been chosen for the conference, in recognition of their growing importance! These include:

Theme No. 1: artificial intelligence
Theme No. 2: computational biology and genome informatics
Theme No. 3: photonics and communications

Finally, it is our great pleasure to announce that two distinguished leading researchers, Dr. Thomas Huang of the University of Illinois and Dr. James Anderson of Brown University, have been selected to receive the prestigious Information Science Award. We hope you will share our enthusiasm for this important event. You are all welcome to the Imperial Sheraton Hotel & Convention Center in Research Triangle Park, Durham, N. C. We look forward to seeing you again next year.

Paul P. Wang

General Chair, JCIS
Chair, Board of Directors, AIM
Professor, Duke University
KEYNOTE AND SEMI-PLENARY SPEAKERS  
(In alphabetical order by speaker’s last name)

MARCH 10, 8:00-8:50 A.M.  
James Albus, NIST  
Intelligent Control for Unmanned Ground Vehicle: Progress and Prospect

MARCH 12, 8:00-8:50 A.M.  
James Anderson, Brown University  
(Recipient, Information Science Award)

MARCH 10, 2:30-3:30 P.M.  
Thomas Bäck, NuTech Solutions GmbH, Germany and Leiden University, The Netherlands  
Adaptive Business Intelligence Based on Evolution Strategies: Some Application Examples of Self-Adaptive Software

MARCH 13, 9:30-10:05 A.M.  
Fil Bartoli, NSF  
Future Trends in Ultra-High-Capacity Optical Communications

MARCH 12, 2:30-3:30 P.M.  
Alan Bierman, Duke U., USA  
The Coming Voice Dialogue Machines

MARCH 8, 9:30-10:05 A.M.  
Stephen Bryant, NCBI, NLM, USA  
Conserved Domain Data Base

(CANCELED) MARCH 8, 2:30-3:30 P.M.  
Larry Carin, Duke U., USA  
HMMs, SVMs and RVMs for Processing Sequential Bio-Informatics Data

MARCH 11, 8:30 P.M. (BANQUET SPEAKER)  
MARCH 13, 8:00-8:50 A.M.  
H. John Caulfield, Fisk U., USA

MARCH 13, 8:50 A.M.  
Vincent Chan, MIT, USA  
All Optical Network: Prospect for the Future

MARCH 10, 5:30-6:30 P.M.  
John Franco, U. of Cincinnati, USA  
Non-Linear SAT Solver

MARCH 11, 8:50-9:30 A.M.  
Walter Freeman, U. of Cal., Berkeley, USA  
Creative Neurodynamics at the Interface Between the Finite Brain and the Unbounded Complexity of Its Environment

MARCH 10, 6:15-7:05 P.M.  
Irwin Goodman, Space and Naval Warfare Systems Center, USA  
New Applications of Relational Event Algebra to Fuzzy Quantification and Probabilistic Reasoning

MARCH 13, 2:30-3:30 P.M.  
Ulrich Geosele, Max Planck

MARCH 11, 1:30-2:30 P.M.  
T. S. Huang, U. of Illinois, USA  
(Recipient, Information Science Award)  
Relevance Feedback in Content-Based Image Retrieval: Some Recent Advances

MARCH 8, 1:30-2:30 P.M.  
Erich Jarvis, Duke U., USA  
Integrating the Songbird Brain

MARCH 9, 8:50-9:30 A.M.  
Robert Jernigan, LECB, NCI, USA  
Protein Structure and Function

MARCH 11, 6:15 P.M. (SEE CIN-2)  
S. C. Kak, Louisiana State U., USA  
A Class of Instantaneously Trained Neural Networks

MARCH 10, 9:30-10:05 A.M.  
Etienne Kerre, Ghent U., Belgium  
On the Evolution of Fuzzy Mathematics

MARCH 9, 9:30-10:05 A.M.  
Thom LaBean, Duke U., USA  
Self Assembling DNA Structures from Nanotechnology

MARCH 12, 8:50-9:30 A.M.  
Emmett Leith, U. of Michigan, USA  
Some Highlights in the History of Information Optics

MARCH 9, 6:45-7:45 P.M.  
John Mordeson, Creighton U., USA  
Fuzzy Commutative Algebra and Intersection Equations

MARCH 12, 1:30-2:30 P.M.  
Karl H. Pribram, M.D., Ph.D. (Hon. multi.), Georgetown U., USA  
Fields of Memory

MARCH 12, 2:30-3:30 P.M.  
Demetri Psaltis, Caltech, USA
MARCH 9, 6:45-7:45 P.M.
Anbazhagan Ramaswamy, Johns Hopkins U., USA
Cross Platform Studies in Microarrays: Do They Speak the Same Language?

MARCH 8, 8:00-8:50 A.M.
Jane Richardson, Duke U., USA
Exploring Features and Quality Controls in the 3D Molecular Database

MARCH 9, 8:00-8:50 A.M.
Roberto Sanchez, Mt. Sinai School of Medicine, USA
The Use of Protein Structure Modeling Methods to Study Protein Function

MARCH 13, 1:30-2:30 P.M.
Axel Scherer, Caltech, USA
Photonic Crystal Nanocavities and Waveguides

MARCH 9, 2:30-3:30 P.M.
Jeffrey P. Sutton, Harvard-MIT, USA
Reconfigurable Networking for Coordinated Multi-Agent Sensing and Communications

MARCH 10, 2:30-3:30 P.M.
Leigh Tesfatsion, Iowa State U., USA
Agent-Based Computational Economics: Modelling Economies as Complex Adaptive Systems

MARCH 10, 1:30-2:30 P.M.
Jeff Vitter, Duke U., USA
Compressed Indexes for Fast Search in Sequences

MARCH 8, 8:50-9:30 A.M.
Hubert P. Yockey
Informatics, Information Theory, and the Origin of Life

MARCH 11, 9:30-10:05 A.M.
Lotfi A. Zadeh, U. of Cal., Berkeley, USA
Toward a Theory of Definability based on PNL

PANEL DISCUSSIONS

MARCH 9, 1:30-3:30 P.M.
COMPUTATIONAL BIOLOGY AND GENOME INFORMATICS
James Siedow, Duke U., USA
Jane Richardson, Duke U., USA
Stephen Bryant, NCBI, NLM, USA
Zhao-Bang Zeng, NCSU, USA
Robert Jernigan, LECB, NCI, USA
Vasant Honavar, Iowa State U., USA

MARCH 11, 3:50-5:30 P.M.
UNITY OF INFORMATION SCIENCES
Karl Pribram, Georgetown U., USA
H. John Caulfield, Fisk University, USA
Lotfi Zadeh, U. Cal., Berkeley, USA
Emmett Leith, U. of Michigan, USA
Demetri Psaltis, Caltech, USA
Walter Freeman, U. Cal., Berkeley, USA

MARCH 13, 3:50-5:30 P.M.
THE FUTURE OF PHOTONICS & NETWORKING
Kristina Johnson, Duke U., USA
Ulrich Geosele, Max Planck
David Brady, Duke U., USA
Axel Scherer, Caltech, USA
Vincent Chan, MIT, USA
Fil Bartoli, NSF, USA
WORKSHOP ON COMPUTATIONAL PROTEIN STRUCTURE ANALYSIS

March 10
Room: Crown B

Workshop Co-Chairs

Tom Darden
Laboratory of Structural Biology
National Institute of Environmental Health Sciences

Alexander Tropsha
School of Pharmacy
University of North Carolina

Iosif Vaisman
School of Computational Sciences
George Mason University

INTRODUCTION
9:45-10:00 am  Iosif Vaisman, George Mason University

SESSION 1.  CHAIR - IOSIF VAISMAN
10:00-10:30 am  Perfection and imperfections in the protein core
    Jan Hermans, University of North Carolina
10:40-11:10 am  TBA
    Alex Tropsha, University of North Carolina
11:20-11:50 am  TBA
    Stephen Bryant, National Center for Biotechnology Information, NIH

SESSION 2.  CHAIR - ALEX TROPSHA
1:00-1:30 pm  Model for the catalytic domain of the proofreading epsilon subunit of E. Coli DNA polymerase III based on NMR structural data
    Tom Darden, National Institute of Environmental Health Sciences, NIH
1:40-2:10 pm  Protein structure analysis using computational geometry
    Iosif Vaisman, George Mason University
2:20-2:50 pm  TBA
    Rachelle Bienstock, National Institute of Environmental Health Sciences, NIH

SESSION 3.  CHAIR - TOM DARDEN
3:10-3:40 pm  TBA
    Lee Pedersen, University of North Carolina
3:50-4:20 pm  Protein structure comparison based on a new algorithm for common subgraph isomorphism
    Eugene Krissinel, European Bioinformatics Institute
4:30-5:00 pm  Structure based design of inhibitors of HIV-1 reverse transcriptase
    Prem Yadav, American Type Culture Collection (ATCC)

ROUND-TABLE DISCUSSION
8TH INTERNATIONAL CONFERENCE ON FUZZY THEORY AND TECHNOLOGY

MARCH 11, 6:15-7:50 P.M.
CHAIR: TBA

FTT-1: FUZZY ALGEBRAIC AND TOPOLOGICAL STRUCTURES

α-Cut Fuzzy Ideals of a Ring
Yangyong Lilian, Lanshou U., P.R.China

Some Algebraic Properties And A Distance Measure
For Interval-Valued Fuzzy Numbers
Dug Hun Hong, Catholic U. of Daegu, South Korea

Representative Fuzzy Points From Colimits
J.M. Barone, Datatek, USA

Categories Of Fuzzy Topological Spaces With Localization At Points
N.N. Morsi, Arab Academy for Sci., Tech., and Marine Transport, Egypt

Fuzzy Subgroups Of An Abelian Group Of Order P^n q^m
V. Murali, Rhodes U., South Africa

Bipolar Logic And Bipolar Fuzzy Partial Orderings
For Clustering And Coordination
Wen-Ran Zhang, Georgia Southern U., USA

a-Resolution Principle Based On An Intermediate Element Lattice-Valued Propositional Logic
D. Meng, Y. Xu, Southwest Jiaotong U., P.R. China

MARCH 12, 10:20 A.M.-12:30 P.M.
CHAIR: CHRIS CORNELIS, GHENT U., BELGIUM

FTT-4: INTUITIONISTIC FUZZY SETS I (INVITED)

On Intuitionistic Fuzzy Databases
M.A. Alam, R. Biswas, Hamdard U.; A. Sharfuddin, Jamia Millia Islamia, India

A Proposal for a New Generation of Computers
A. Jamil, A.Q. Ansari, R. Biswas, Hamdard U., India

Open Problems in Intuitionistic Fuzzy Sets Theory
K.T. Atanassov, CLBME-Bulgarian Academy of Science, Bulgaria

Rough Intuitionistic Fuzzy Sets
S. Rizvi, H.J. Naqvi, D. Nadeem, Jamia Millia, India

MARCH 10, 7:45-9:30 P.M.
CHAIR: JOHN MORDESON, CREIGHTON U., USA

FTT-2: FUZZY MATHEMATICS

On the Random Approximation of a Fuzzy Set
P. Terán, M. López-Díaz, U. of Oviedo, Spain

Hukuhara Derivative under the Integral Sign of a Fuzzy Random Variable
L.J. Rodríguez-Muñiz, M. López-Díaz, M.A. Gil, U. of Oviedo, Spain

Tolerable Solution Sets Of Interval-Valued Fuzzy Relational Equations
S. Wang, S.-C. Fang, H. Nuttle, N.C. State U., USA

D_p,q -Distance and Rao-Blackwell Theorem for Fuzzy Random Variables
B.S. Gildeh, D. Gien, LIMOS (IFMA), France

A Complete Characterization of Fuzzy Cliques
P. S. Nair, Creighton U., USA

MARCH 10, 3:50-5:30 P.M.
CHAIR: G. DESCHRIJVER, GHENT U., BELGIUM

FTT-5: INTUITIONISTIC FUZZY SETS II (INVITED)

About Intuitionistic Fuzzy Implication Operators
H. Bustince, P. Burillo, V. Mohedano, U. Pública de Navarra, Spain

Classification Of Intuitionistic Fuzzy Implicators:
An Algebraic Approach
C. Cornelis, G. Deschrijver, E. Kerre, Ghent U., Belgium

Survey of the Research On Intuitionistic Fuzzy Sets
M. Nikolova, N. Nikolov, CLBME-Bulgarian Academy of Science, Bulgaria;
C. Cornelis, G. Deschrijver, Ghent U., Belgium

MARCH 9, 10:20 A.M.-12:30 P.M.
CHAIR: L.J. KOHOUT, FLORIDA STATE U., USA

FTT-6: APPLICATIONS IN GEOGRAPHICS & FINANCES

Personal Geographic Information Systems Using Intelligent Architecture
D. Kang, Y. Matsuda, J. Uema, H. Miyagi, U. of the Ryukyus, Japan

Digital Image Classification of Land Cover
J. Montero, J. Yáñez, A. Amo, D. Gómez, Complutense U., Spain; G. Biging, UC Berkeley, USA
Fuzzy Logic Applied to the Geological Sciences: An Emerging Application for Seismic Interpretation
J.D. Warren, L.R. Bartek, H.N. Ramsey, UNC; P.P. Wang, Duke U., USA

A Fuzzy Decision Making Model of American Option Pricing in Financial Engineering
Y. Yoshida, U. of Ritsukyushu, Japan

MARCH 10, 10:20 A.M.-12:30 P.M.
CHAIR: JAVIER MONTERO, COMPLUTENSE U., SPAIN

FTT-7: ON THE FOUNDATIONS OF FUZZY AND NON-FUZZY LOGICS II

Dempster ≠ Shafer
M.J. Wierman

Alternative Set Theory In Quantum Modeling
L.J. Kohout, Florida State U., USA

Generalized Rough Sets And Fuzzy Membership Functions
Y.Y. Yao, U of Regina, Canada

MARCH 9, 7:45-9:30 P.M.
CHAIR: WEN-RAN ZHANG, GEORGIA SOUTHERN U, USA

FTT-8: APPLICATIONS OF SOFT COMPUTING TECHNIQUES I. CONTROL

A New Theory of Fuzzy Chaos and Its Application for Simulation of Robotic Dynamic Systems
O. Castillo, P. Melin, Tijuana Inst. of Tech., USA

A Fuzzy Modeling & Identification of a Dynamic System
Narindar Singh, Nirmal Singh, Beant College of Eng. and Tech., India

A Fuzzy-Constraint-Based Framework for Agent Negotiation
Rober Lai and Menq-Wen Lin, Yuan Ze U., Taiwan, ROC

A Fuzzy Logic Controller for Traffic Junction Signals
Chih-Hsun Chou and Jen-Chao Teng, Chung-Hua U., Taiwan, ROC

MARCH 12, 6:15-7:45 P.M.
CHAIR: TBA

FTT-9: APPLICATIONS OF SOFT COMPUTING TECHNIQUES II. MEDICINE

Vitamin D Receptor Gene Polymorphism’s Effect of Bone Mineral Density: Analysis by Use of Belief Functions
S.-C. Cheng, A.A. Goetzinger, J.N. Mordeson, Creighton U., USA

A New Hybrid Case-Based Architecture for Medical Diagnosis
Chien-Chang Hsu, Fu-Jen Catholic U., and Cheng-Seen Ho, Nat. Taiwan U. of Sci. and Tech., Taiwan, ROC

MARCH 9, 7:45-9:30 P.M.
CHAIR: WEN-RAN ZHANG, GEORGIA SOUTHERN U, USA

FTT-10: APPLICATIONS OF SOFT COMPUTING TECHNIQUES III. DATA ENGINEERING

A Possibility Approach to Fuzzy Data Envelopment Analysis
S. Lertworasirikul, S.-C. Fang, J.A. Joines, H.L.W. Nuttle, NC State U., USA

Mining Functional Dependencies with Degrees of Satisfaction in Databases
Qiang Wei, Guoqing Chen, P.R. China

A Multi-Objective Neuro-Evolutionary Algorithm for Fuzzy Modeling
Fernando Jiménez, Gracia Sánchez, Antonio F. Gómez-Skarmeta, U. de Murcia, Spain; Jose L. Verdegay, U. de Granada, Spain

Quadratic Optimization on Convex Set with Fuzzy Constraints
Jianming Shi and Hiroshi Inoue, Science U. of Tokyo, Japan

MARCH 12, 7:45-9:15 P.M.
CHAIR: TBA

FTT-11: ARTIFICIAL INTELLIGENCE AND SPEECH RESEARCH

Granular Computing:
A Fuzzy Constraint-based Perspective
Robert Lai and David Chang, Yuan Ze U., Taiwan

16-Band Filter Derived by Admissible Wavelet Packet for Phoneme Recognition
O. Farooq and S. Datta, Loughborough U., UK

Performance of a Wavelet-Based Frontend Under Typical Noisy Environments for Continuous Speech Recognition
J. Sujatha, K. R. Prasanna Kumar, K. R. Ramakrishnan and N. Balakrishnan, India Inst. of Sci., India

On Fuzziness and Theory of Fuzziness Science
Shi-quan Chen, Jian-nan He and Zhi-yu Chen, Wuyi U., P.R. China
CSI-1: SCHEDULING

Lookahead Scheduling in a Real-Time Context
Ben Coleman and Weizhen Mao, College of William & Mary, USA

Task Scheduling on Minimal Processors with Genetic Algorithms
Wensheng Yao, Jinyuan You, Shanghai Jiao Tong U., P.R. China

A Study on Task Scheduling in Computational Grid
Fang Xing, Wang Xiaoge, Li Sanli and He Chuan, Tsinghua U., P.R. China

CSI-2: DATA WAREHOUSE I

XML for Web-Based Database Applications
Y. W. Chiou, Nat. Penghu Inst. of Tech., Taiwan, ROC

E-Commerce Frameworks with XML
Y. W. Chiou, Nat. Penghu Inst. of Tech., Taiwan, ROC

Measuring Changes in Streaming XML Documents
Leanne M. Seaward and Lawrence V. Saxton, U. of Regina, Canada

CSI-3: DATA WAREHOUSE II

A Reference Architecture for Integrating Heterogeneous Information Sources using XML and Agent Model
N. Arch-int and P. Sophatsathit, Chulalongkorn U., Thailand

Schema and Data Integration for Relational and Object-Oriented Data Sources
Vincenza Carchiolo, Alessandro Longheu, Michele Malgeri, U. di Catania, Italy

A Comparison of Markov Random Field and Spatial Regression Models for Mining Geospatial Data
Sanjay Chawla, Shashi Shekhar, Weili Wu, U. of Minnesota, USA

CSI-4: WIRELESS NETWORKS

Connected Domination in Multihop Ad Hoc Wireless Networks
Mihaela Cardei, Xiaoyan Cheng, Xiuzhen Cheng, Ding-Zhu Du, U. of Minnesota, USA

Variant of Ad Hoc On-Demand Distance Vector and Dynamic Source Routing Protocol
Veerapuneneni Satish Kumar, India Inst. of Tech., India

An Enhanced Solution for Generating Loop-Free Routes in Dynamic Networks
Jie Wu, Florida Atlantic U., USA

CSI-5: WIRELESS NETWORKS

A Group Mutual Exclusion Algorithm for Ad Hoc Mobile Networks
Jehn-Ruey Jiang, Hsuan Chuang U., P.R. China

Crosscut Flooding in Ad Hoc Wireless Networks
Siu Wai Lo, Chih-Bin Lee and Y. Yang, SUNY at Stony Brook, USA

Design of Secure Communication Systems based on Cryptograph and Chaotic Synchronization
The-Lu Liao, Tsun-I Chien and Shin-Hua Tsai, Nat. Cheng Kung U., Taiwan, ROC

CSI-6: OPTICAL NETWORKS

Efficient Distributed Control Routing and Wavelength Assignment Mechanism for a Scalable Hierarchical Single-hop WDM all-Optical Interconnection Network
Ekpe Okorafor and Mi Lu, TAMU, USA

SCOPIN: A New Scalable Optical Interconnection Network for Multiprocessor Systems
Ekpe Okorafor and Mi Lu, TAMU, USA

Optical Crossconnect Architectures for Wavelength Routed WDM Networks
X. Qin and Y. Yang, SUNY at Stony Brook, USA
MARCH 11, 6:15-7:50 P.M.
CHAIR: TBA

CSI-7: NEURAL NETWORKS
Fast Data Detectors Based on Receiver State Properties
D. Khedim, U. of Sci. & Tech. Mohamed Boudiaf, Algeria
Towards a Better Forecasting Model for Economic Indices
Jing Tao Yao, U. of Regina, Canada
Extended Fuzzy Regression Models
Du Huy Hong and Changha Hwang, Catholic U. of Daegu, Kyungbuk, S. Korea

MARCH 12, 10:20 A.M.-12:30 P.M.
CHAIR: TBA

CSI-8: NETWORKING
Group Management Schemes for Implementing MPI collective Communication over IP—Multicast
Xin Yuan, Scott Daniels, Ahmad Faraj and Amit Karwande, Florida State U., USA
Performance Analysis of a CAN/ATM LAN Bridge Under Various Loads
I. Ozcelik, H. Ekiz and F. Selcuk, Sakarya U.; I. Erturk, Kocaeli U., Turkey
A Delay-Scaling Multicast Algorithm with Multiple QoS Criteria
L. Chen, B.S. Lee, U. of Vermont; G.L. Xue, Arizona State U., USA
A Global Review of WAP Architecture & Wireless Applications for Mobile Commerce
Ching-Yu Tyan, Ming Chuan U., Taiwan, ROC

MARCH 12, 3:50-5:30 P.M.
CHAIR: TBA

CSI-9: WEB SEARCH ENGINE
Measuring the Quality of Web Search Results
M. Beg and C. Ravikumar, India Inst. of Tech., India
Genetic Algorithm Based Rank Aggregation for the Web
M. Beg and N. Ahmad, India Inst. of Tech., India
Web Search by Feedback Learning
M. Beg, India Inst. of Tech., India

MARCH 12, 7:45-9:15 P.M.
CHAIR: TBA

CSI-10: LEARNING ALGORITHMS
A New Distributed Learning Automata Based Algorithm For Solving Stochastic Shortest Path Problem
Hamid Beigy and Mohammad Reza Meybodi, Amirkabir U. of Tech., Iran
A Learning Automata Based Graph Isomorphism Algorithm
Hamid Beigy and Mohammad Reza Meybodi, Amirkabir U. of Tech., Iran
A Web-based SQL Learning System Using Web Mining Techniques
Cheng-Fa Tsai, Nat. Pingtung U. of Sci. & Tech., Taiwan, ROC
Support Vector Machines for Improved Multiaspect Target Recognition Using the Fisher Kernel Scores of Hidden Markov Models
Balaji Krishnapuram and Lawrence Carin, Duke U., USA

MARCH 11, 10:20 A.M.-12:30 P.M.
CHAIR: TBA

CSI-11: GRAPH THEORY
Shortest Path Length Calculation Using Graph Transformations
Yoshihiro Mizoguchi, Kyushu U., Japan
A Multiple-Searching Approach to Genetic Algorithms for Solving Traveling Salesman Problem
Cheng-Fa Tsai, Chun-Wei Tsai, Chi-Ping Chen, and Feng-Cheng Lin, Nat. Pingtung U. of Sci. and Tech., Taiwan, ROC
Minimizing Communication Costs in Hierarchical Multi-Agent Systems
Kiran R. Bhutani, The Catholic U. of America; Bilal Khan, Naval Research Lab., USA

MARCH 11, 6:15-7:50 P.M.
CHAIR: TBA

CSI-12: INFORMATION RETRIEVAL I
A Wrapper Generator for Integrated Information Retrieval
Min-Huang Ho, Shyan-Ming Yuan, Nat. Chiao Tung U.; Yue-Shan Chang, Ming-Hsin Inst. of Tech.; Wen-Chun Sun, Inst. for Information Industry
The Application of Hypertext Retrieval in Fulltext Retrieval System
Su Xin-ning, Nanjing U., P.R. China
Granular Computing for the Organization and Retrieval of Scientific XML Documents
Y.Y. Yao, K. Song and L.V. Saxton, U. of Regina, Canada
CSI-13: FILE SYSTEM MANAGEMENT
An Efficient Algorithm for Bulk-Loading of the Multilevel Grid File

CSI-14: INFORMATION RETRIEVAL II
Retrieval System for Patent Documents Using References
Kouhei Awaya, Shoken Nasu, Hiroshi Shigeno, Yutaka Matsushita, Keio U., Japan

CSI-15: MULTIMEDIA SYSTEMS
Sender-Side Storage Scheme of Multimedia Email
Qingsheng Zhu, Rui Li, Qian Wang, Zhongfu Wu, Chongqing, U., P.R. China

Human Face Detection in Digital Video Using SVM Ensemble
Hong-Mo Je, Daejin Kim, Sang-Yang Bang, POSTECH; Sang-Yoon Lee, Young-Sik Choi, Korea Telecom, Korea

Metrics for Measuring Complexity in Object-Oriented Analysis
Yu-kyung Kim, and Jae-nyun Park, Sookmyung Women’s U., Korea
A Generalized Framework for Analyzing Capturing Races in Go
Martin Müeller, U. of Alberta, Canada

TD(µ): A Modification of TD(λ) That Enables a Program to Learn Weights for Good Play Even if It Observes Only Bad Play
Donald Beal, London U., UK

MARCH 12, 6:15-7:45 P.M.
CHAIR: TBA

CSI-19: DECISION-SUPPORT SYSTEM (INVITED)
A Theoretical Framework for the Identification of the Role of IT in the Support to Decision Making
Manuel Mora T., UAA & DEPI-UNAM; Francisco Cervantes-Pérez, ITAM, Mexico; Guisseppi Forgionne, U. of Maryland Baltimore County, USA

Modeling Online Stickiness for Investment Decisions Through Econometrics
Supawadee Ingsriswang and Guisseppi Forgionne, U. of Maryland, Baltimore County, USA

Implementing Rail Grade Crossing Investment Analysis with a Decision Support System
Gloria E. Phillips-Wren, Loyola College and Guisseppi A. Forgionne, U. of Maryland, Baltimore County, USA

MARCH 13, 10:20 A.M.-12:30 P.M.
CHAIR: TBA

CSI-20: DATA MINING

Mining Influential Association Rules
X. Zhang, Z. Chen, and Q. Shu, U. of Nebraska at Omaha, USA

Data Mining in Deductive Databases Using Query Flocks: Extended Abstract
Ismail H. Toroslu, U. of Central Florida, USA; Meliha Yetisgen, Turkey

Methods for Designing Head-Tracking Probes
Larry Davis, Jannick P. Rolland, and Rebecca Parsons, U. of Central Florida, USA; Erick Clarkson, U. of Arizona, USA

MARCH 13, 5:30-7:05 P.M.
CHAIR: TBA

CSI-21: ADAPTIVE MODELING AND APPLICATIONS

Analytic Model for Crossbar Multiprocessors
Ker-Kun Chang and Chun-Yi Lin, Chang Gung U., Taiwan, ROC

An Approach for Query Optimizing in a Mobile Environment
J. W. Yan, Z. Chen and Q. Zhu, U. of Nebraska at Omaha, USA

On the Fault-tolerant Embeddings of Complete Binary Trees in Mesh Interconnection Networks
Wei-Chen Fang, Chiu-Chieh Hsu, Nat. Taiwan U. of Sci. and Tech.; Chien-Min Wang, Inst. of Inform. Science Academic Sinica, Taiwan, ROC

MARCH 9, 3:30-5:30 P.M.
CHAIR: TBA

CSI-22: ADAPTIVE SYSTEMS IN SOFT COMPUTING AND LIFE SCIENCES

Evolving Connectionist Systems for Adaptive Learning in Soft Computing and Life Sciences
N. Kasabov, U. Otago, New Zealand

Parameter Estimation for Second-Order Systems Using a Genetic Algorithm Technique
K. R. Shubha and Maurice F. Aburdene, Bucknell U., USA

Speech Recognition with Evolving Neural Networks
Ghobakhloou, Watts and Kasabov, U. of Otago, New Zealand

5TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL INTELLIGENCE AND NEUROSCIENCES

MARCH 11, 10:20 A.M.-12:30 P.M.
CHAIR: SANJOY DAS, KANSAS STATE U., USA

CIN-1

Polynomial Time Algorithm and Its Heuristics to Find the Best Move of a Very Large-Scale Neighborhood Search Technique
Duy Huynh, U. of Wisconsin – Parkside, USA

A Hyperlink-Proposal Mechanism to Exemplify Cognitive Algorithms for Web-Applications
Ernst-Georg Haffner, Uwe Roth, and Christoph Meinel, Institute of Telematics, Germany

A Topographic Kernel-based Regression Method
Kenji Nishida, Takashi Takahashi, Takio Kurita, National Inst. of Adv. Industrial Sci. and Tech., Japan

Finite Models for Learning
Leona Fass, USA
MARCH 11, 6:15-7:50 P.M.
CHAIR: LEONA FASS, USA

CIN-2
A Class of Instantaneously Trained Neural Networks
S. C. Kak, Louisiana State U., USA

The Gene SPILL Algorithm as a Function Optimizer
Sanjoy Das, Kansas State U., USA

An Ant Algorithm for Multicast Routing in Communication Networks
Sanjoy Das, Kansas State U.; Indira Mohanty, U. of Colorado, Colorado Springs; Dong Zhe Yang, The Mathworks, Natick, MA, USA

Pattern Classification Using a Quantum System
Dan Ventura, Brigham Young U., USA

MARCH 12, 3:50-5:30 P.M.
CHAIR: BRUCE MACLENNAN,
U. TENNESSEE, KNOXVILLE, USA

CIN-3
Modeling A Cerebrum/Cerebellum System As An Evolving Multiagent Data Warehouse
Wen-Ran Zhang, Georgia Southern U., USA

N1-P2 Evoked Response as a Measure for Short-Term Visual Memory
R. Palaniappan and P. Raveendran,
U. of Malaya, Malaysia

Intelligent Control of a Motor Drive Using a Hybrid Neuro-Fuzzy Approach
Patricia Melin and Oscar Castillo, Tijuana Institute of Technology, USA

MARCH 12, 10:20 A.M.-12:30 P.M.
CHAIR: SIMON LEVY, BRANDEIS U., USA

CIN-4: NEW FRONTIERS FOR RECURRENT NETWORKS (SPECIAL SESSION)
Modeling the Development of Lexicon with a Growing Self-Organizing Map
Igor Farkas and Ping Li, U. of Richmond, USA

Recurrent Networks as Models of Short Term Memory
Matt Jones and Thad A. Polk, U. of Michigan, USA

Continuous Information Representation and Processing In Natural and Artificial Neural Networks
Bruce J. MacLennan, U. of Tennessee, Knoxville

Goal Management in a Recurrent Neural Network
Patrick Simen, Thad Polk, Rick Lewis, and Eric Freedman, U. of Michigan, USA

4TH INTERNATIONAL WORKSHOP ON FRONTEIRS IN EVOLUTIONARY ALGORITHMS

MARCH 12, 6:15-7:45 P.M.
CHAIR: FERNANDO JIMÉNEZ, UNIVERSIDAD DE MURCIA, SPAIN

FEA-1: APPROXIMATION AND INTERPOLATION
Polynomial Genetic Programming for Response Surface Modeling
K.H. Lee, Y.S. Yeun, W.S. Ruy, and Y.S. Yang, Korea Research Institute of Ships and Ocean Engineering, Korea

Evolutionary Optimization of Approximating Triangulations for Surface Reconstruction from Unstructured 3D Data
Klaus Weinert, Jörn Mehnen, Markus Schneider, U. of Dortmund, Germany

A Breeder Genetic Algorithm for Finite Impulse Filter Optimization
Oscar Montiel, Roberto Sepúlveda, Nat. Polytechnic Inst., Tijuana, Mexico; Oscar Castillo, Patricia Melin, Tijuana Inst. of Tech., USA

MARCH 13, 5:30-7:05 P.M.
CHAIR: JOSÉ ANTONIO BECERRA,
UNIVERSIDAD DE A CORUNA, SPAIN

FEA-2: MULTIOBJECTIVE PARETO EVOLUTIONARY ALGORITHMS AND COMBINATORIAL OPTIMIZATION
Automated Biological Sequence Description and Recognition by a Localized Multiobjective Genetic Algorithm
Igor Zwir, R. Romero Zaliz, U. de Buenos Aires, Argentina

A Pareto-Evolutionary Approach for Goal and Priority Based Multi-Objective Optimization Problems
Fernando Jiménez, Gracia Sánchez, Antonio Gómez-Skarmeta, Universidad de Murcia, Spain

A New Molecular Computing Algorithm Based on Signaling Pathways
Jian-Qin Liu and Katsunori Shimoohara, ATR International, Japan

On the Study of Genetic Algorithms in the Hard Region of SAT
Carmen Hernández, Manuel Graña, Francisco J. Torrealdea, U. Pais Vasco, Spain

Using Evolutionary Algorithms to Evaluate Simplified Models for Protein Structure Prediction
Jonas Gamalielsson, Njorn Olsson, U. Skövde, Sweden
MARCH 13, 10:20 A.M.-12:30 P.M.
CHAIR: MANUEL GRANA, UNIVERSIDAD PAIS VASCO, SPAIN

**FEA-3: CONVERGENCE I**

Graphed Evolutionary Computing
Rutger ter Borg, Leon Rothkrantz, Delft U. of Technology, The Netherlands

Genetic Algorithm with Limited Convergence
Jiri Kubalik, Léon J. M. Rothkrantz, Delft U. of Technology, The Netherlands; Jiri Lazansky, CTU Prague, Czech Republic

Mutation, Transposition, and Recombination: An Analysis of the Evolutionary Dynamics
Cândida Ferreira, Gepsoft, UK

Design Optimization Integrating the Outer Approximation Method with Process Simulators and Linear Genetic Programming
Larry M. Deschaine, Science Applications International Corp.; Frank F. Francone, Register Machine Learning Technologies, USA

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MARCH 11, 10:20 A.M.-12:30 P.M.
CHAIR: LEON ROTHKRANTZ, DELFT U. TECHNOLOGY, THE NETHERLANDS

**FEA-4: CONVERGENCE II**

Multi-phase Discrete Particle Swarm Optimization
Buthainah Al-kazemi and Chilukuri K. Mohan, Syracuse U., NY, USA

MA vs. GA in Low Population Evolutionary Processes with Mostly Flat Fitness Landscapes
J. A. Becerra, J. Santos and R. J. Duro, U. da Coruña, Spain

Sampled Fitness Functions in Complex Problems (Part I): Influence of Short Term Memory Size
F. Bellas, J. A. Becerra and R. J. Duro, U. da Coruña, Spain

Sampled Fitness Functions in Complex Problems (Part II): Critical Points and Constructing Short Term Memories
F. Bellas, J. A. Becerra and R. J. Duro, U. da Coruña, Spain

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MARCH 13, 7:45-9:15 P.M.
CHAIR: RICHARD DURO, UNIVERSIDAD DE A CORUNA, SPAIN

**FEA-5: APPLICATIONS I**

The Application of Genetic Algorithms in Planning Activities at Extreme Situations
V. I. Litvinenko, A. A. Fefelov, A. A. Tkachuk, V. E. Hodakov, State Tech. U. of Kherson, Ukraine

Evolving Context-Free Grammars
Walling Cyre, Virginia Tech, USA

A New Chromosome Codification for Scheduling Problems
Ramiro Varela, Camino R. Vela, Jorge Puente, David Serrano, Ana Suárez, U. of Oviedo, Spain

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MARCH 13, 7:30-9:00 P.M.
CHAIR: RAMIRO VARELA, UNIVERSIDAD DE OVIEDO, SPAIN

**FEA-6: APPLICATIONS II**

An Evolutionary Approach to Phylogenetic Tree Construction
Clare Bates Congdon, Colby College, USA

Synthetic Pheromones for Avoiding Social Dilemmas
Matthew H. Thomas, Air Force Res. Lab; Jae C. Oh, Syracuse U., USA

Evolution-based Learning of Ontological Knowledge for a Large-scale Multi-agent Simulation
Alina Lazar, Robert G. Reynolds, Wayne State U., USA

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MARCH 12, 6:15-7:45 P.M.
CHAIR: HIDEKI NODA, KYUSHU INST. OF TECH., JAPAN

**CVPRIP-1: IMAGE BASE, WATERMARKING AND VIDEO I**

A Histogram with Perceptually Smooth Color Transition for Image Retrieval
Shamik Sural, Gang Qian, and Sakti Pramanik, Michigan State U., USA

A Robust Multiple Watermarking Scheme for Still Image Using DWT, DCT and Spread Spectrum
Wen-Yuan Chen, Chin-Hsing Chen, National Cheng Kung U.; Izau-Sheng Lin, Nat. Chin-Yi Inst. of Technology, Taiwan, ROC

A Flexible Search-by-Similarity Algorithm for Content-Based Image Retrieval
J. Fournier, M. Cora, U. of Cergy-Pontoise, France
CVPRIP-2: IMAGE BASE, WATERMARKING AND VIDEO II

MARCH 10, 3:50-5:30 P.M.
CHAIR: HIDEKI NODA, KYUSHU INST. OF TECH, JAPAN

BPCS Steganography Combined with Lossy Wavelet Compression
Hideki Noda, Jeremiah Spaulding, Michiharu Niimi, Eiji Kawaguchi, Kyushu Inst. of Tech.; Mahdad N. Shirazi, Comm. Res. Lab., Japan

Video Scene Analysis Using Best Basis Wavelets and Learning Strategies
Deepa Umamaheswaran, Jeffrey Huang, Mathew Palakal, Indiana U.; Suzali Suyut, IUPUI, USA

Using Thousands of Images of an Object
Robert Pless, Ian Simon, Washington U. in St. Louis, USA

CVPRIP-3: FACE RECOGNITION I

MARCH 10, 7:45-9:30 P.M.
CHAIR: G. A. KHUWAJA, KUWAIT U., KUWAIT

An Efficient Algorithm for Face Detection in Color Images
Sanun Srisuk and Werasak Kurutach, Mahanakorn U. of Technology, Thailand

A Novel Method to Compensate Variety of Illumination in Face Detection
Hong Liu, Wen Gao, Jun Miao, Jintao Li, Chinese Academy of Sciences, P. R. China

Shape Adaptation from Self-Occluding Contour in Face Modeling
Hui Zhang, Guangyou Xu, Tsinghua U., P. R. China

CVPRIP-4: FACE RECOGNITION II

MARCH 11, 10:20 A.M.-12:30 P.M.
CHAIR: TBA

Video Based Face Recognition by Support Vector Machines
Li Zhuang, Haizhou Ai and Guangyou Xu, Tsinghua U., P. R. China

Image Database for Automatic Face Recognition
S. K. Singh, Mayank Vatsa, Richa Singh, VBS Purvancal U., India; R.B. Lokesh, IISc Bangalore, India

Invariant Face Recognition with LVQ
G.A. Khuwaja, Kuwait U., Kuwait

CVPRIP-5: THRESHOLDING AND SEGMENTATION I

MARCH 11, 6:15-7:50 P.M.
CHAIR: GUNTHER DREVIN, POTCHEFSTROOM U. FOR CHE, SOUTH AFRICA

Optimum-Interval Interpolation Approach to Real-time Thresholding
H. D. Cheng and X. J. Shi, Utah State U.; C. Glazier, Utah Dept. of Transportation, USA

A Hardware Efficient Technique for Rapid Lumen Segmentation from Endoscopic Images
H. Tian and T. Srikantan, Nanyang Tech. U., Singapore; K. Vijayan Asari, Old Dominion U., USA

CVPRIP-6: THRESHOLDING AND SEGMENTATION II

MARCH 12, 10:20 A.M.-12:30 P.M.
CHAIR: A. BONCH-OSMOLOVSKY, RRC KURCHATOV INST., RUSSIA

Fast Active Contour Convergence through Adaptive Curvature Scale Space Smoothing
Farzin Mokhtarian and Farahnaz Mohanna, U. of Surrey, UK

Fuzzy Integral Based Image Segmentation and the Optimal Implementation Using Genetic Algorithm
Hongwei Zhu, Otman Basir, Fakhri Karray, U. of Waterloo, Canada

Segmentation And Classification Of Terrain Using Texture, Intensity And Edge as Features
Jharna Majumdar, B. Vanathy, Aeronautical Development Establishment, India

CVPRIP-7: MEDICAL AND 3D IMAGING

MARCH 12, 3:50-5:30 P.M.
CHAIR: SYLVIE PHILIPP-FOIGUET, ETIS, ENSEA/UCP, FRANCE

Mass Detection Using Fuzzy Neural Network
H.D. Cheng and Muyi Cui, Utah State U., USA

Clustering and Estimation of 2-D Motion Fields in Ultrasonic Images Based on Regression Characteristics with Respiratory Signals
Takaya Kitazawa, Norio Tagawa, Akihiro Minagawa, Tadashi Moriya, Tokyo Metropolitan U.; Shin-ichi Minohara, Nat. Inst. of Radiological Sciences, Japan

Novel Approach to Medical Image Enhancement
H.D. Cheng, M. Xue, Utah State U.; R. Freimanis, Bowman Gray School of Medicine, USA
A Methodology for 3D Shape Recognition Using Modified Exoskeleton
Rajalida Lipikorn, Akinobu Shimizu, Yoshihiro Hagihara and Hidefumi Kobatake, Tokyo U. of Agric. & Tech., Japan

MARCH 12, 7:45-9:15 P.M.
CHAIR: ZHENGRONG YING, BOSTON U., USA

CVPRIP-8: FEATURE AND PATTERN EXTRACTION I

Evaluating Feature Relevance: Reducing Bias in Relief
José Bins, Pontificia U. Católica, Brazil; Bruce A. Draper, Colorado State U., USA

Directional Primitive Extraction and Analysis by Means of Gabor Wavelets and Auto-Organised Structures
Marta Penas, Cástor Mariño, Manuel G. Penedo, U. da Coruña;
María J. Carreira, U. de Santiago de Compostela, Spain

Fusion of Corners from Multiple Scales for Robust Tracking
Farahnaz Mohanna and Farzin Mokhtarian, U. of Surrey, UK

MARCH 13, 10:20 A.M.-12:30 P.M.
CHAIR: JOSE BINS, PONTIFICIA U. CATOLICA, BRAZIL

CVPRIP-9: FEATURE AND PATTERN EXTRACTION II

Basic Patterns Extraction for Printed Circuit Board Images Analysis
Shih-Yuan Huang, Kuo-Sheng Cheng, and Chi-Wu Mao, National Cheng Kung U., Taiwan, ROC

Corner Detection Based on Finding Edge Points Locally
Fei Shen, Han Wang, Nanyang Technological U., Singapore

Indexing of Fuzzy Regions
Sylvie Philipp-Foliguet, Marcelo Bernardes Vieira, Martial Sanfourche, ETIS, ENSEA/UCP, France

MARCH 13, 3:30-5:00 P.M.
CHAIR: TBA

CVPRIP-10: CVPRIP ALGORITHMS I

Accelerating The Ray/Triangular-Facet Intersection Computation
Donald L. Hung, San Jose State U., USA

An Efficient Algorithm for Fast Computation of Zernike Moments
C.W. Chong, R. Mukundan, Multimedia U.; P. Raveendran, U. of Malaya, Malaysia

Computation of Motion and Occlusion Relation of Objects from the Motion of Their Boundaries
A. Akhriev, A. Bonch-Osmolovsky, and A. Prusakov, RRC Kurchatov Instit., Russia

Iterative Extended Mean Shift Algorithm
Gabriela Maletti, Bjarne Ersbøll and Knut Conradsen, Technical U. of Denmark

MARCH 13, 7:30-9:00 P.M.
CHAIR: KLAUS TONNIES

CVPRIP-11: CVPRIP ALGORITHMS II

Motion Blur Identification in Spatial Domain
Weimiao Yu, Kah Bin Lim, Shay Liang Lee, MPE,NUS, Singapore

Vector Quantizer in Transform Coding Using a Grey Neural Network
Chun-Liang Tung, lzau-Sheng Lin, and Shao-Han Liu, National Chin-Yi Instit. of Tech., Taiwan, R.O.C.

Ameliorating Boundary Errors from Quantizing Images with the Discrete Wavelet Transform
John P. Collins and David K. Y. Chiu, U. of Guelph, Canada

Unsupervised Multiscale Focused Objects Detection Using Hidden Markov Tree
Zhen Ye and Cheng-Chang Lu, Kent State U., USA

MARCH 13, 10:20 A.M.-12:30 P.M.
CHAIR: DAVID K. Y. CHIU, U. GUELPH, CANADA

CVPRIP-12: CVPRIP ALGORITHMS III

Expression Recognition Using 2D Embedded HMM
Jun Sun, Wenyuan Wang, Qing Zhuo, Tsinghua U., P.R. China

Novel Approach To Optimization of Domain Search
D.B. Kulkarni, P J Kulkarni, Trivikram Phatak, Walchand College of Engineering, India

Correspondence for Nonrigid Object Recognition
Zhengrong Ying, David Castaño, Boston U., USA

PCA vs. ICA: A Comparison on the FERET Data Set
Kyungm Baek, Bruce Draper, J. Ross Beveridge, Kai She, Colorado State U., USA

MARCH 13, 5:30-7:05 P.M.
CHAIR: TBA

CVPRIP-13: CVPRIP APPLICATIONS I

Mouth-Shape Classification and Recognition for Lipreading
Hongxun Yao, Wen Gao, Wei Shan, Xiujuan Chai, Harbin Instit. of Tech., P. R. China
Classification of Rice Grain Using New Scale Invariant Zernike Moments
Wee Chong Yaw, P. Raveendran, U. of Malaya, Malaysia; Fumiaki Takeda, Kochi U. of Tech., Japan; Takeo Tsuzuki, Hiroshi Kadota and Satoshi Shimanouchi, SEIREI Industry Co. Ltd., Japan

Skin Color Detection and its Application in Bayesian Iris-Based Eye Localization
Shoupu Chen, and Lawrence A. Ray, Eastman Kodak Company, Rochester, USA

March 13, 7:30-9:00 P.M.
Chair: Shoupu Chen, Eastman Kodak Co., USA

CVPRIP-14: CVPRIP APPLICATIONS II
Neural Network Verification of Dynamic Signatures using Pressure Sensitive Pen
Tham Heng Keit and P. Raveendran, U. of Malaya, Malaysia; Fumiaki Takeda, Kochi U. of Technology, Japan; Yoshikazu Yoshida, Japan System Dev. Co. Ltd., Japan

Using Mathematical Morphology to Determine the Roundness (Smoothness) of Sedimentary Rock Particles
Günther R. Drebin, Potchefstroom U. for CHE, South Africa; Luc Vincent, Lizard Tech, Inc., USA

RealTime Markerless Motion Tracking Using Linked Kinematic Chains
Jason P. Luck, Colorado School of Mines; Daniel E. Small, Sandia National Labs, USA

March 12, 3:50-5:30 P.M.
Chair: Edward K. Wong, Polytechnic U., USA

CVPRIP-15: CVPRIP ALGORITHMS IV
Mixing Supervised & Unsupervised Learning for Image Deblurring
Min Su and Mitra Basu, City U. of New York, USA

A Genetic Algorithm For Constrained Seismic Horizon Correlation
Melanie Aurnhammer, Klaus Tönnies, Otto-von-Guericke U. Magdeburg, Germany; Rafael Mayoral, U. Pública de Navarra, Spain

Detecting Critical Points Based on Baysion Distance
Ding Jingfeng, Tao Chunkan, Nanjing U. of Sci. & Tech; Yan Zhonggen, Shanghai Marine College

Generation of Dense Disparity Maps in Stereo Vision
Fernando Marques de Almeida Nogueira, UFJF; Clésio Luis Tozzi, Unicamp-U. Estadual de Campinas, Brazil

March 12, 10:20 A.M.-12:30 P.M.
Chair: TBA

CVPRIP-16: CVPRIP ALGORITHMS V
Grouping for Simplicity
Sowmya Ramakrishnan, Peter Forte, Kingston U., UK

Realistic Computer Image Generation With Prediction
Xiaobo Li, Zheng Yi, Shantou U., China

Locating Image Background By Monotonic Tree
Yuqing Song and Aidong Zhang, SUNY at Buffalo, USA

Monte Carlo Methods in Stereovision
Julien Sénégas, Michel Schmitt, École des Mines de Paris; Philippe Nonin, Istar, France

March 11, 6:15-7:30 P.M.
Chair: TBA

CVPRIP-17: CVPRIP ALGORITHMS VI
New Algorithm for Point Pattern Matching
Yasser El-Sonbaty, Arab Academy for Sci. and Tech; M.A. Ismail, Faculty of Eng., Egypt

Optimally Quantized and Smoothed Histograms
Mingzhou Song, Robert Haralick, U. of Washington, USA

Text Extraction in Color Video Using Multi-frame Edge Information
Minya Chen and Edward K. Wong, Polytechnic U., USA

Object Recognition with spatially Correlated Occlusion
Zhengrong Ying, David Castañon, Boston U., USA

2nd International Workshop on Intelligent Multimedia Computing and Networking

March 10, 9:30-10:05 A.M.
Chair: Timothy Shih, Tamkang U., Taiwan

Audio Indexing: What Has Been Accomplished and the Road Ahead (Invited Paper)
Ivan Magrin-Chagnolleau, U. Lumière Lyon 2 & CNRS; Nathalie Parlangeau-Vallès, LORIA, INRIA Lorraine, France

March 8, 6:15-7:30 P.M.
Chair: Hong Va Leong, Hong Kong Polytechnic U., Hong Kong

IMM-1: MULTIMEDIA TECHNOLOGY I
On Multi-Channel Data Broadcast Scheduling
Aaron T. Hawkins and Weizhen Mao, College of William & Mary, USA
Streaming SMIL Presentations via a Multimedia Semantic Model
Shu-Ching Chen, Chengcui Zhang, Florida Int. U., USA; Sheng-Tun Li, Hung-Chi Chen, Nat. Kaohsiung First U. of Sci & Tech., Taiwan, ROC; Mei-Ling Shyu, U. of Miami, Coral Gables, USA

Key Object(s) Extraction from Video Sequences Using Color Quantization
JungHwan Oh, U. Texas at Arlington, USA

MARCH 8, 7:45-9:00 P.M.
CHAIR: WONJUN LEE, EWHA WOMANS U., KOREA
IMM-3: MULTIMEDIA NETWORK AND DISTRIBUTED COMPUTING

Secure Transcoding of Internet Content
Yuan-Chi Chang, Richard Han, Chung-Sheng Li, and John R. Smith, IBM, USA

JPARSS: A Java Parallel Network Package for Grid Computing
Jie Chen, Walt Akers, Ying Chen, and William Watson III, Thomas Jefferson Nat. Accelerator Facility, USA

Clea: A Framework for the Coordination of Applications and Networks

Dynamic Data Distribution Algorithm Based on Behavior Model
Yue Lihua, Yang Xiaoyu, and Dong Qunfeng, U. of Sci. and Tech. of China, P.R. China

High Performance Information and Network Services for Multimedia-Integrated Distributed Control
Wonjun Lee, Ewha Womans U., Korea; Jaideep Srivastava, U. of Minnesota, USA; James Richardson, Honeywell Tech. Cntr., USA

MARCH 9, 3:50-5:30 P.M.
CHAIR: JASON C. HUNG, KUANG WU INST. OF TECH., TAIWAN
IMM-4: IMAGE PROCESSING AND RETRIEVAL I

An Efficient Edge Detection Technique for Chinese Calligraphy
Chin-Chen Chang, Iuon-Chang Lin, Nat. Chung Chang U.; Timothy K. Shih, Tamkang U., Taiwan, ROC

An Algorithm for Color Image Compression Base on Common Bit Map Block Truncation Coding
Chin-Chen Chang and Ming-Ni Wu, Nat. Chung Chang U., Taiwan, ROC

Content-Based Information Retrieval in Large VR Scene Database
Timothy K. Shih, Jian-Hung Huang, Tamkang U.; Yi-Ping Hung, Academia Sinica, Taiwan, ROC

MARCH 8, 7:45-9:00 P.M.
CHAIR: JONATHAN C. L. LIU, U. FLORIDA, USA
IMM-5: IMAGE PROCESSING AND RETRIEVAL II

3D Models Retrieval and Indexing
S. Mahmoudi and M. Daoudi, ENIC, France

Retrieval of Geographic Location with Emergence Index in Multimedia
Sagarmay Deb and Yanchun Zhang, U. of Southern Queensland, Australia

Image Indexing and Similarity Retrieval Based on Spatial Relation Model
Ying-Hong Wang, Tamkang U., Taiwan, ROC

MARCH 10, 7:45-9:30 P.M.
CHAIR: CHYI-REN DOW, FENG CHIA U., TAIWAN
IMM-6: QOS AND NETWORK

DMWRR: A QoS Scheduling for the Delay Fairness
Lain-Chyr Hwang, Steen J. Hsu, I-Shou U.; Cheng-Yuan Ku, Nat. Chung Cheng U.; Ying-Tien Tsai, Chunghua Telecom Co., Ltd; Amy Wang, Nat. Tungkang Maritime & Fishery Vocat. H.S., Taiwan, ROC

QoS Control Algorithms Based on Benefit Optimization for Video Servers Providing Differentiated Services
Ing-Ray Chen, Virginia Tech., USA; Sheng-Tun Li, NKFUST, Taiwan, ROC; I-Ling Yen, UT Dallas, USA

QoS Control for Multimedia Application in Mobile Computing Environment
Seongkee Lee and Taeyun Kim, Korea U., Korea

QoS Adjustment Scheme for Video Transmission to a Heterogeneous Receivers Group
Tatsuya Yamazaki, ATR Adaptive Comm. Res. Lab., Japan
An Adaptive IP Address Allocation and Management System
Chyi-Ren Dow, Pi-Hua Lin, and Sheng-Chang Chen,
Feng Chia U., Taiwan, ROC

MARCH 10, 3:50-5:30 P.M.
CHAIR: T. G. TSUEI, NAT. DONG HWU U., TAIWAN

IMM-7: ENCODING AND DECODING I
Design and Analysis of A Set-Top Box for Video Streaming Services
Ing-Ray Chen and Edward A. Fox, Virginia Tech, USA

MARCH 8, 10:20 A.M.-12:30 P.M.
CHAIR: JONG-HYEOK LEE,
POHANG U. OF SCIENCE & TECH., KOREA

IMM-8: ENCODING AND DECODING II
Adaptive Key Frames Selection Algorithms for Summarizing Video Data
Waleed E. Farag and Hussein Abdel-Wahab,
Old Domiinion U., USA

Improving Multimedia Streaming with Content-Aware Video Scaling
Avanish Tripathi and Mark Claypool,
Worcester Polytechnic Instit., USA

Digital Watermarking Based on Pixels Relationships
Ren-Junn Hwang, Rong-Chi Chang, Sheng-Hua Shiu,
Tsung-Ming Chang, Tamkang U.;
Chun-Chia Wang, Kuang Wu Inst. of Tech.;
Hui-Huang Hsu, Chinese Culture U., Taiwan, ROC

An Object XML-based Approach for Multimedia Application Processing and Development
Hon Chung Mak, Edmund, Hong Kong Instit. of Ed.;
Qing Li, City U. of Hong Kong, Hong Kong

MARCH 10, 10:20 A.M.-12:30 P.M.
CHAIR: ING-RAY CHEN, VIRGINIA TECH., USA

IMM-10: MOBILE COMPUTING AND AGENT SYSTEMS
Strategies and Techniques for Mobile Media Server
Jason C. Hung, Chun-Chia Wang, Kuang Wu Inst. of Tech.;
Timothy K. Shih, Tamkang U., Taiwan, ROC

IPv6-GSM: An IPv6-based Solution for GSM Number Portability
Han-Chieh Chao, Chih-Hung Ying, and T. G. Tsuei,
Nat. Dong Hwa U., Taiwan, ROC

Online Notes-taker: Toward a Web-based Agent Mechanism Supporting Comprehensible Reading
Elvis W. C. Leung, Hospital Authority, Hong Kong;
Qing Li, City U. of Hong Kong, Hong Kong

Mobile Agent Model for Manipulating Distributed Objects Systems
Takao Komiya, Hiroaki Ohshida, and Makoto Takizawa, Tokyo Denki U., Japan

Application and Performance Study of a Distributed Agent Environment
Stanley M. T. Yau, Hong Va Leong, Hong Kong Polytechnic U., Hong Kong; Antonio Si, Oracle Corp., USA

2ND INTERNATIONAL WORKSHOP ON COMPUTATIONAL INTELLIGENCE IN ECONOMICS AND FINANCE

MARCH 9, 7:45-9:30 P.M.
CHAIR: KOICHI KURUMATANI, NAT. INST. OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY, JAPAN

CIEF-1: DIVERSITY OF ECONOMIC SYSTEMS IN MULTI-AGENT MODELING AND SIMULATION (INVITED)

X-Economy: A Common Simulation Platform for Artificial Market and Artificial Economy
Hidenori Kawamura, Hokkaido U.;
Koichi Kurumatani and Azuma Ohuchi, Nat. Instit. of Advanced Industrial Sci. and Tech., Tokyo, Japan

Emergence of Key Currency in International Trade by Production and Trader Agents
Yuichi Sasaki, Tomohisa Yamashita, Hidenori Kawamura,
Azuma Ohuchi, Hokkaido U.; Koichi Kurumatani, Nat. Instit. of Adv. Industrial Sci. & Tech., Japan
Complexity of Information Structure and Behavior of Artificial Market with Learning Trader Agents

Identification of Agents’ Strategy Making Process by an Experimental Market
Kiyoshi Izumi, CARC, AIST & PRESTO, JST; Shiego Nakamura, Kazuhiro Ueda, U. of Toyo, Japan

MAEP: A Standard Communication Protocol for Artificial Economy – An Instance of X-SS
Akio Sashima, Koichi Kurumatani, Cyber Assist Res. Cnr., Japan

MARCH 9, 10:20 A.M.-12:30 P.M.
CHAIR: TIAN-SHYUG LEE, FU-JEN U., TAIWAN

CIEF-2: ARTIFICIAL NEURAL NETWORKS AND SELF-ORGANIZING MAPS
Numerical Solution to a Stochastic Growth Model Based on Evolution of Radial Basis Networks
Fernando Álvarez, Banco Central de Venezuela; Néstor Carrasquero, Claudio Rocco, U. Central de Venezuela, Venezuela

Effective Position of European Firms in the Face of Monetary Integration using Kohonen’s SOFM
Raquel F. Lopez, U. of Leon, Spain

Credit Scoring Using Neural Networks and Discriminant Analysis
Tian-Shyug Lee, Chi-Jie Lu, Fu-Jen Catholic U.; Chih-Chou Chiu, Nat. Taipei U. of Tech., Taiwan, ROC

A Neural Network Model in Credit Risk Assessment Based on New Risk Measurement Criterion
Li-yong Yu, Zhi-gang Duan, Harbin Institute of Technology; Han-ling Li, HuaZhong U. of Sci. & Tech., P.R. China

MARCH 9, 3:50-5:30 P.M.
CHAIR: CHRISTIAN R. RICHTER, U. STRATHCLYDE, UK

CIEF-3: ECONOMETRICS
International Transmission of Business Cycle: A Markov Switching Self-Organizing State Space Model
Morikazu Hakamata, The Graduate U. for Advanced Studies, Japan

White Noise Tests and APT Economic Factor Syntheses Using Temporal Factor Analysis
Kai Chun Chiu and Lei Xu, The Chinese U. of Hong Kong, Hong Kong

Learning and Monetary Policy in a Spectral Analysis Representation

Sensitivity Analysis of Genetic Programming: A Case of Symbolic Regression
Shu-Heng Chen, Tsu-Wen Kuo, National Chengchi U.; Yuh-Pyng Shieh, Taiwan, ROC

MARCH 10, 10:20 A.M.-12:30 P.M.
CHAIR: ANA MAROSTICA, U. BUENOS AIRES, ARGENTINA

CIEF-4: MACHINE LEARNING
Pattern Matching in Multidimensional Time Series
Arnold Polanski, Universidad de Alicante, Spain

A Support Vector Machine Model for Currency Crises Discrimination
Claudio M. Rocco S., José Ali Moreno, U. Central Venezuela, Venezuela

Business Failure Prediction Using Modified Ants Algorithm
Chunfeng Wang, Xin Zhao, Tianjin U., P.R. China

Semiotic-Data Mining Procedures for a Financial Information System
Ana Marostica, Cesar Briano, Ernesto Chinkes, U. of Buenos Aires, Argentina

FKMS: A Knowledge Management System with Financial Data Mining Embedded
Yi-Chuan Lu, Hilary Cheng, Yuan Ze U.; Calvin Hsu, Coast Guard Admin., Taiwan, ROC

MARCH 10, 3:50-5:30 P.M.
CHAIR: THOMAS BAECK, LEIDEN U., THE NETHERLANDS

CIEF-5: AGENT-BASED ECONOMIC MODELING I
Modeling and Control for Dynamic Market Price in the Demand and Supply Model
Takaharu Miura, Syuhei Nakagawa, Hiromitsu Ohmori and Akira Sano, Keio U., Japan

Boundedly Rational Agents Achieving Collusive Outcomes in the Cournot Game
Floortje Alkemade, J. A. La Poutré, Center for Mathematics and Computer Science, The Netherlands

Distributed Accounting on the Grid
William Thigpen, NASA AMES; Thomas J. Hacker, Brian D. Athey, U. of Michigan; Laura F. McGinnis, Pittsburgh Supercomputing Center, USA

Effects of Tax and Evolution in an Artificial Society
Thomas Bäck, NuTech Solutions GmbH, Germany and Leiden University, The Netherlands; Daniel Vermeulen, Leiden U.; Agoston E. Eiben, Vrije U. Amsterdam, The Netherlands
MARCH 10, 7:45-9:30 P.M.  
CHAIR: CHUNG-CHIH LIAO, NATIONAL TAIWAN U., TAIWAN

CIEF-6: AGENT-BASED ECONOMIC MODELING II

Optimal Market Structure: Does One Shoe Fit All?  
Nicolas Audet, U. of Michigan, USA; Toni Gravelle, Jing Yang, Bank of Canada, Canada

On the Interaction between Pricing and Trading Models in an Artificial Stock Market  
Elpida Tzafestas, Nat. Tech. U. of Athens; Alexandros Benos, U. of Piraeus, Greece

Individual Rationality as a Partial Impediment to Market Efficiency  
Shu-Heng Chen, Chung-Chin Tai, Bin-Tzong Chie, National Chengchi U., Taiwan

Why Are There Sunspots? An Analysis Based on Agent-Based Artificial Stock Markets  
Shu-Heng Chen, National Chengchi U.; Chung-Chih Liao, National Taiwan U., Taiwan

MARCH 8, 3:50-5:30 P.M.  
CHAIR: KIM JOHNSON, DUKE U., USA

CBGI-2: PROTEIN STRUCTURE AND FUNCTION

Data-Driven Discovery of Protein Function Classifiers: Decision Trees Based on MEME Motifs  
Outperform PROSITE Patterns and Profiles on Peptidase Families  
Xiangyun Wang, Diane Schroeder, Drena Dobbs, and Vasant Honavar, Iowa State U., USA

Discovering Protein Function Classification Rules from Reduced Alphabet Representations of Protein Sequences  
Carson M. Andorf, Drena L. Dobbs, Vasant G. Honavar, Iowa State U., USA

A Filtering Method for High-Speed Retrieval of Similar Active Sites  
Tadasuke Nakagawa, Takanori Tanaka, Takenao Ohkawa, Haruki Nakamura, Osaka U., Japan

A Method of Comparing Protein Molecular Surface Based on Normal Vectors with Attributes and Its Application to Function Identification  
Yoshikagu Kaneta, Norimasa Shoji, Takenao Ohkawa, Haruki Nakamura, Osaka U., Japan

MARCH 8, 10:20 A.M.-12:30 P.M.  
CHAIR: RACHELLE BIENSTOCK, NIEHS, USA

CBGI-1: MACROMOLECULAR SEQUENCE ANALYSIS

Analysis of Amino Acid Sequences by Statistical Technique  

Recognizing PROSITE Patterns with Cellular Automata  
Kim Laurio, Fredrik Linäker, Ajit Narayanan, U. of Skövde, Sweden

Fast Algorithm for Extracting Multiple Unordered Short Motifs Using Bit Operations  
Osamu Maruyama, Satoru Kuhara, Kyushu U.; Hideo Bannai, Satoru Miyano, U. of Tokyo; Yoshinori Tamada, Tokai U., Japan

Application of Global Computational Tools GeneOrder and OrthologLocator to the Comparative Analyses of Chordopoxvirus Genomes  
Nikhat Zafar, Raja Mazumder and Donald Seto, George Mason U., USA

Application of Global Computational Tools GeneOrder and OrthologLocator to the Comparative Analyses of Chordopoxvirus Genomes  
Nikhat Zafar, Raja Mazumder and Donald Seto, George Mason U., USA

CBGI-3: GENE EXPRESSION DATA ANALYSIS I

Oligonucleotide Microarray Data Distribution and Normalization  
I.A. Sidorov, D. Gee, D.S. Dimitrov, Nat. Cancer Inst., NIH; D.A. Hosack, J. Yang, R.A. Lempicki, SAIC, NCI; M.C. Cam, NIDDK, NIH, USA

Evaluation of Microarray Design for Bacterial Strain Identification  
David K.Y. Chiu, Ryan Zhao, Shu Cen, U. of Guelph, Canada

Interpreting Microarray Expression Data Using Text Annotating the Genes  
Michael Molla, Peter Andreae, Jeremy Glasner, Frederick Blattner, Jude Shavlik, U. Wisconsin, USA

Evolutionary Analysis for Developmental Profiles of Gene Family Expression in Central Nervous System  
Yufeng Wang, ATCC; Xin Gu, Iowa State U., USA
MARCH 9, 10:20 A.M.-12:30 P.M.
CHAIR: VICTORIA ANN SMITH, DUKE U., USA

CBGI-4: GENETIC NETWORK INFECTION
Could Correlation-based Methods be Used to Derive Genetic Association Networks?
Angelica Lindlöf and Björn Olsson, U. of Skövde, Sweden

Inference of a Gene Regulatory Network by Means of Interactive Evolutionary Computing
Atsushi Mimura, Hitoshi Iba, U. of Tokyo, Japan

Evolutionary Modeling and Inference by Genetic Network
Shin Ando, Erina Sakamoto, Hitoshi Iba, U. of Tokyo, Japan

MARCH 9, 7:45-9:15 P.M.
CHAIR: FRAN YUAN, DUKE U., USA

CBGI-5: GENE EXPRESSION ANALYSIS II
Using Functional Annotation to Improve Clusterings of Gene Expression Patterns
Per Jonsson, Kim Laurio, Zelmina Lubovac, Björn Olsson, U. of Skövde; Magnus L. Andersson, AstraZeneca R&D, Sweden

Expression Pattern of Yeast Sporulation: A Case Study for Regulatory Changes after Yeast Genome Duplication
Wei Huang, Dan Nettleton, Xun Gu, Iowa State U., USA

Functional Divergence in TGF-b Signaling Pathway
Jianying Gu, Xun Gu, Iowa State U., USA

MARCH 8, 7:30-8:30 P.M.
POSTER SESSION AND RECEPTION

Toward the Development of an Open Metadata Framework for Compositional Proteomics
W. John McMullen, David A. Fenstermacher, UNC, USA

Differential Expression of SAMDC a Polyamine Biosynthesis Gene During Cold Stress in Rice
M. Armugam Pillai, Takashi Akiyama, Hokkaido Nat. Agri. Experiment Station, Japan

Quality-Dependent Data Filtering, Normalization and Data Mining using Microarray Technology
Xujing Wang and Soumitra Ghosh, Children's Hospital of Wisconsin and Med. College of Wisconsin, USA

Estimating Entropy
William Bialek and Jonathan Miller, Princeton U., USA

MARCH 9, 1:30-3:30 P.M.
CHAIR: JAMES SIEDOW, DUKE U., USA

CBGI PANEL DISCUSSION:
Jane Richardson, Duke U., USA
Stephen Bryant, NCBI, NLM USA
Zhao-Bang Zeng, NCSU, USA
Robert Jernigan, LECB, NCI, USA
Vasant Honavar, Iowa State U., USA

MARCH 10, 9:45-5:00 P.M.
(SEE PAGE 11)
WORKSHOP:
PROTEIN STRUCTURE AND FUNCTION
(SPONSORED BY GEORGE MASON UNIVERSITY)

1ST SYMPOSIUM ON PHOTONICS, NETWORKING AND COMPUTING

MARCH 12, 10:20 A.M.-12:30 P.M.
CHAIR: I.S. HWANG, YUAN ZE U., TAIWAN

PNC-1: PHOTONIC NETWORKS I
Multi-Drop Path Model for Multicast Routing
Shuguang Yan, Maher Ali, Jitender Deogun, U. of Nebraska-Lincoln, USA

Access Protocols for Optical burst-Switched Ring Networks
Lisong Xu, Harry G. Perros, and George N. Rouskas, NCSU, USA

The Optimal Testing in Photonic Switching Networks Using Tabulation Methodology
I-Shyan Hwang, Yuan Ze U.; I-Feng Huang, Kang Ning Junior College of Nursing, Taiwan

Analysis of Adaptive Cost Functions for Dynamic Update Policies for Hierarchical QoS Routing
Ben-Jye Chang and Ren-Hung Hwang, National Chung Cheng U., Taiwan
### PNC-2: NETWORKS I

**Design and Performance Evaluation of Scheduling Algorithms for Unslotted CSMA/CA with Backoff MAC Protocols in Multiple-Access WDM Ring Networks**

Kyeong Soo Kim, Leonid G. Kazovsky, Stanford U., USA

Using Self-Organization to Build High Performances and Highly Available Internet Services

Amin Vahdat

### PNC-3: OPTICAL COMPONENTS I

**Transparent Silica Glasses Containing Single Walled Carbon Nanotubes**

J. DiMaio, S. Rhyne, K. Fu, R. Czerw, J. Xu, S. Webster, Y.-P. Sun, D.L. Carroll, J. Ballato, Clemson U., USA

**Synthesis and Characterization of Optically Nonlinear and Light Emitting Lanthanide Borates**

Henry G. Giesber, John Ballato, William T. Pennington, and Joseph W. Kolis, Clemson U., USA

The Stochastic Generative Model for Cost Effective OADM Using the Neural Network in WDM Access Networks

I-Shyan Hwang, San-Nan Lee and Yi-Shiu Lin, Yuan-Ze U., Taiwan

### PNC-4: OPTICAL COMPONENTS II

**Crosstalk Studies for Fiber Bragg Gratings**

Santosh Narayankhedkar, Duke U., USA; R.K. Shevgaonkar, U. Of Nebraska at Omaha, USA

**An Isomorphic Fourier Transform Approach to Light Propagation in AWGs, FBGs, and Photonic Crystals**

Michael C. Parker, Fujitsu Network Communications, USA, Fujitsu Telecom Europe, UK; Stuart D. Walker, U. of Essex, UK

**MEMS Tunable Gratings with Analog Actuation**

Wei-Chuan Shih, Chee Wei Wong, Yong Bae Jeon, Sang-Gook Kim, and George Barbastathis, MIT, USA

**Thermal Design of Photonic Devices**

G. Chen, MIT, USA

**Low Loss Perfluorocyclobutyl**

D. W. Smith, Jr., Clemson U., USA

### PNC-5: WDM NETWORKS I

**An On-Line Routing and Wavelength Assignment Algorithm for Dynamic Traffic in a WDM Bidirectional Ring**

Poompat Saengudomlert, Eytan Modiano, and Robert G. Gallager, MIT, USA

**Survivable Embedding of Logical Topology in WDM Ring Networks**

Hwajung Lee, Hongsk Choi, Suresh Subramaniam, and Hyeong-Ah Choi, GWU, USA

**Switching and Traffic Grooming in WDM Networks**

Randall Berry, Northwestern U., USA; Eytan Modiano, MIT, USA

**Collision-less Scheduling Algorithms with Arbitrary Transceiver Tuning Latencies in Broadcast DWDM Networks**

I-Shyan Hwang and Hsuan-Chih Chen, Yuan Ze U., Taiwan

### PNC-6: HOLOGRAPHY AND OPTO ELECTRONICS

**Resonant Holography**

Arnab Sinha and George Barbastathis, MIT, USA

**A LOCS Microdisplay Driver with Frame Buffering Pixels**

Sangrok Lee, James C. Morizio, Kristina M. Johnson, Duke U., USA

**Methods for Designing Head-Tracking Probes**

Larry Davis, Jannick P. Rolland, and Rebecca Parsons, U. of Central Florida; Erick Clarkson, U. of Arizona

**Tensile Strain Induced Phenomena in Quantum Wells**

Theda M. Daniels-Race, Duke U., USA

### PNC-7: PHOTONIC NETWORKS II

**The O (N^5/6) Time Complexity of Fault Diagnosis Algorithm in NxN Dilated Blocking Photonic Switching Networks**

I-Shyan Hwang, Hung-Chang Lin and San-Nan Lee, Yuan-Ze U., Taiwan

**Wavelength Exchange: A Novel Function for Optical Networks**

M. E. Marhic, K. K. Y. Wong, K. Uesaka, and L. G. Kazovsky, Stanford U., USA
Optical Code Division Multiplexing (OCDM) and Its Application for Peta-bit/s Photonic Network
Hideyuki Sotobayashi, Wataru Chujo, Communications Research Lab., Independent Administrative Inst., Japan; and Ken-ichi Kitayama, Osaka U., Japan

Performance Evaluation of Optical Mesh Restoration Schemes
Sunggy Koo and Suresh Subramaniam, GWU, USA

MARCH 13, 7:30-9:00 P.M.
CHAIR: DAN STEVENSON, MCNC, USA

PNC-8: NETWORKS II
Design of a Real-time Scheduler in the Distributed Database Environment
Hong-Ren Chen and Y.H. Chin, National Tsing Hua U., Taiwan

Analytic Modeling of Handoffs in Wireless Cellular Networks
Kishor S. Trivedi, Dharmaraja Selvamuthu, and Xiaomin Ma, Duke U., USA

MARCH 12, 6:15-7:45 P.M.
CHAIR: TBA

PNC-9: WDM NETWORKS II
Loopback Recovery from Neighboring Double-Link Failures on WDM Mesh Networks
Hongsik Choi, Suresh Subramaniam and Hyeong-Ah Choi, George Washington U.

Using Local Information for WDM Network Protection
Hungjen Wang, Eytan Modiano, Muriel Médard, MIT, USA

On The Evolution of PON-Based FTTH Solutions
Kyeong Soo Kim, STMicroelectronics, USA

Intelligent Next Generation WDM Optical Networks
Lubo Tancevski, Alcatel Research and Innovation, USA

MARCH 13, 3:50-5:30 P.M.
PANEL DISCUSSION: THE FUTURE OF PHOTONICS & NETWORKING
Kristina Johnson, Duke U., USA
Ulrich Geosele, Max Planck
David Brady, Duke U., USA
Axel Scherer, Caltech, USA
Vincent Chan, MIT, USA
Fil Bartoli, NSF, USA
MISSION STATEMENT
ASSOCIATION FOR INTELLIGENT MACHINERY

1. Bridging the gap between information science and information technology via Information Science Journal.

2. Promoting brain and cognitive research, which can be applied to the commercialization of intelligent engineering systems.

3. Encouraging interdisciplinary research and bringing multidiscipline researchers together via the Joint Conferences on Information Sciences (JCIS).

4. Recognizing the achievements of leading researchers for their enduring contributions to scientific knowledge via the Information Science Award.

5. Bringing together researchers from around the globe and promoting friendship, fraternity, and world peace, via JCIS.