

The 15th IASTED International Conference on
Parallel and Distributed Computing and Systems
~ PDCS 2003 ~
Marina del Rey, CA, USA
November 3–5, 2003



PROGRAM

SPONSORS

The International Association of Science and
Technology for Development (IASTED)

- Technical Committee on Parallel and
Distributed Computing and Systems

LOCATION

Marina Beach Marriott
4100 Admiralty Way
Marina Del Rey, CA 90292
Phone: 1 310-301-3000 or 1 800-228-9290
Fax: 1 310-448-4870

CONFERENCE CHAIR

T. Gonzalez – University of California at Santa
Barbara, USA

INTERNATIONAL PROGRAM COMMITTEE

T.S. Abdelrahman – University of Toronto, Canada
M.A. Aboelaze – York University, Canada
G. Aloisio – University of Lecce, Italy
B.O. Apduhan – Kyushu Sangyo University, Japan
H.R. Arabnia – University of Georgia, USA
T. Baba – Utsunomiya University, Japan
R. Bartos – University of New Hampshire, USA
L. Bengtsson – Chalmers University of Technology, Sweden
B.K. Bhargava – Purdue University, USA
R.D. Bimpica – University of Coruna, Spain
P.T. Breznay – University of Wisconsin – Green Bay, USA
R. Buyya – University of Melbourne, Australia
A.E. Campos – Pontifical Catholic University of Chile, Chile
P. Cappello – University of California at Santa Barbara, USA
G.M. Chaudhry – University of Missouri-Columbia, USA
P.-J. Chuang – Tamkang University, Taiwan
B. Cong – Cal State Fullerton, USA
A. Córdoba Izaguirre – Public University of Navarra, Spain
P. Dasgupta – Arizona State University, USA
A. Datta – University of Western Australia, Australia
E. Dekel – IBM Haifa Research Laboratory, Israel
E.H. D'Hollander – University of Ghent, Belgium
P. Diniz – University of Southern California, USA
P.W. Dymond – York University, Canada
O. Egecioglu – University of California at Santa Barbara, USA
A. El-Amawy – Louisiana State University, USA
E. Ferro – National South University, Argentina
T.L. Freeman – University of Manchester, UK
K.M. George – Oklahoma State University, USA
G.A. Gravvanis – Hellenic Open University, Greece
M. Guizani – University of West Florida, USA
S.E. Hambrusch – Purdue University, USA
H.S. Hassanein – Queen's University, Canada
R.R. Hoare – University of Pittsburgh, USA
S. Horiguchi – Japan Advanced Institute of Science and Technology, Japan
D. Houatra – France Telecom R&D, France
J. JaJa – University of Maryland – College Park, USA
J.-R. Jiang – Hsuan Chuang University, Taiwan
H. Jin – Huazhong University of Science and Technology, PRC
H.D. Karatza – Aristotle University of Thessaloniki, Greece
K.P. Kihlstrom – Westmont College, USA
M.A. Langston – University of Tennessee, USA
G. Lee – University of Illinois at Chicago, USA
S.L. Lee – National Chung Cheng University, Taiwan
K. Li – State University of New York, USA
K.-C. Li – Providence University, Taiwan
Y. Li – Hosei University, Japan
W. Liang – Australian National University, Australia
R. Libeskind-Hadas – Harvey Mudd College, USA
X. Lin – City University of Hong Kong, PRC

F.K. Liotopoulos – Computer Technology Institute, Greece
J. Liu – Metropolitan State University, USA
M. Malkawi – AIM Wireless Inc., USA
H. Masuyama – Tottori University, Japan
M.H. Mickle – University of Pittsburgh, USA
S. Mishra – University of Colorado, USA
E.D. Moreno – Euripides Foundation of Marilia, Brazil
A. Movaghar – Sharif University of Technology, Iran
C.J. Nukoon – Assumption University, Thailand
S. Olariu – Old Dominion University, USA
T. O'Neil – University of Akron, USA
M. Ould-Khaoua – University of Glasgow, UK
O. Ozkasap – Koc University, Turkey
M.A. Palis – Rutgers University, USA
B. Parhami – University of California, USA
J.H. Park – State University of New York at New Paltz, USA
S. Peng – Hosea University, Japan
S. Rajasekaran – University of Connecticut, USA
P. Ramanan – Wichita State University, USA
S. Sahni – University of Florida, USA
J. Sang – Cleveland State University, USA
E.E. Santos – Virginia Polytechnic Institute and State University, USA
E. Schikuta – University of Vienna, Austria
A. Schiper – Swiss Federal Institute of Technology, Switzerland
H. Sethu – Drexel University, USA
E.H.-M. Sha – University of Texas at Dallas, USA
H. Shen – Japan Advanced Institute of Science and Technology, Japan
X. Shen – University of Missouri – Kansas City, USA
W. Shi – Texas A&M University, USA
W. Shi – Wayne State University, USA
G. Singh – Kansas State University, USA
W.W. Smari – University of Dayton, USA
H.S. Soliman – New Mexico Institute of Mining and Technology, USA
H. Sotobayashi – Massachusetts Institute of Technology, USA
L. Sousa – Superior Technical Institute, Portugal
G. Spezzano – ICAR-CNR, Italy
R. Spolon Ulson – State University of São Paulo, Brazil
P.K. Srimani – Clemson University, USA
R. Subramanian – University Sains Malaysia, Malaysia
D. Talia – University of Calabria, Italy
D. Taniar – Monash University, Australia
S. Venkatesan – University of Texas at Dallas, USA
L.N. Vintan – Lucian Blaga University of Sibiu, Romania
M.-Y. Wu – University of New Mexico, USA
C.-Z. Xu – Wayne State University, USA
L.T. Yang – St. Francis Xavier University, Canada
K.-M. Yu – Chung Hua University, Taiwan
S.Q. Zheng – University of Texas at Dallas, USA
W. Zhou – Deakin University, Australia
A.Y. Zomaya – University of Sydney, Australia
X. Zou – University of Nebraska-Lincoln, USA

PROGRAM OVERVIEW

Monday, November 3, 2003

		11:00	Sessions 8, 9, 10, and 11 Continued
07:00 – 08:00	Registration (<i>Promenade Foyer</i>)	14:00	Session 12 – P2P and Group Communications (<i>Promenade Room</i>)
08:00 – 08:30	Welcome (<i>Promenade Room</i>)		Session 13 – Networks I (<i>Pacific II Room</i>)
08:30	Session 1 – Algorithms (<i>Catalina Room</i>)		Session 14 – Hardware Design (<i>Catalina Room</i>)
	Session 2 – Software Architecture (<i>Peninsula Room</i>)		Session 15 – Scientific Computing (<i>Peninsula Room</i>)
	Tutorial – Statistical Tools for Reliable Performance Evaluation (<i>Palisades Room</i>)		
10:00 – 10:30	Coffee Break (<i>Promenade Foyer</i>)	15:00 – 15:30	Coffee Break (<i>Promenade Foyer</i>)
10:30	Sessions 1 and 2 and Tutorial Continued	15:30	Sessions 12, 13, 14, and 15 Continued
14:00 – 15:00	Keynote Lecture – Energy Efficient Computations on FPGAs (<i>Promenade Room</i>)	19:00	Dinner Banquet (<i>Bayview Room</i>)
15:00 – 15:30	Coffee Break (<i>Promenade Foyer</i>)		
15:30	Session 3 – Neural Networks and Genetic Algorithms (<i>Venice Room</i>)		
	Session 4 – Special Session: Synthesis for Programmable Systems (<i>Pacific II Room</i>)		
	Session 5 – Compiler and Run-Time Support (<i>Promenade Room</i>)		
	Session 6 – Programming Languages and Systems (<i>Catalina Room</i>)		
	Session 7 – Parallel I/O and Distributed Data (<i>Peninsula Room</i>)		
18:00 – 22:30	Optional Tour – LA by Night (<i>Hotel Main Lobby</i>)		

Tuesday, November 4, 2003

08:30	Session 8 – Security Issues (<i>Promenade Room</i>)		Session 23 – Communication Issues (<i>Peninsula Room</i>)
	Session 9 – Routing Techniques (<i>Pacific II Room</i>)		
	Session 10 – Wireless Networks (<i>Catalina Room</i>)		
	Session 11 – Distributed Computing (<i>Peninsula Room</i>)		
10:30 – 11:00	Coffee Break (<i>Promenade Foyer</i>)		

Wednesday, November 5, 2003

08:30	Session 16 – Scheduling and Resource Allocation (<i>Promenade Room</i>)		
	Session 17 – Web Services and Tools (<i>Pacific II Room</i>)		
	Session 18 – Distributed Agents (<i>Catalina Room</i>)		
	Session 19 – Software Systems and Tools (<i>Peninsula Room</i>)		
10:30 – 11:00	Coffee Break (<i>Promenade Foyer</i>)		
11:00	Sessions 16, 17, 18, and 19 Continued		
14:00	Session 20 – Load Balancing (<i>Promenade Room</i>)		
	Session 21 – Networks II (<i>Pacific II Room</i>)		
	Session 22 – Grid Computing (<i>Catalina Room</i>)		
15:00 – 15:30	Coffee Break (<i>Promenade Foyer</i>)		
15:30	Sessions 20, 21, 22, and 23 Continued		

Thursday, November 6, 2003

09:00 – 17:30	Optional Tour – Hidden Treasures of the California Coast (<i>Hotel Main Lobby</i>)
---------------	--

MONDAY, NOVEMBER 3, 2003

07:00 – 08:00 REGISTRATION

IASTED Staff:

Room: Promenade Foyer

08:00 – 08:30 WELCOME

Presenter: Dr. T. Gonzalez, USA

Room: Promenade Room

08:30 – SESSION 1 – ALGORITHMS

Chair:

Room: Catalina

392-007

A Modified Dynamic Programming Approach for Analyzing Flexible Manufacturing Systems

A. Tarek (USA)

392-018

Computing Nearest Neighbors in Real Time*

M. Nagy and S.G. Akl (Canada)

392-059

2D-data Partition on the HBSP Model

T. Ishimizu and M. Higuchi (Japan)

392-087

Distributed Algorithms for Constructing Multicast Trees

G. Lo Re and L. Gatani (Italy)

392-112

Algorithms for Disk Covering Problems with the Most Points

B. Xiao, Q. Zhuge, Y. He, Z. Shao, and E.H.-M. Sha (USA)

392-205

A Simple Algorithm for Time Optimal Modular Multiplication and Exponentiation

V. Bunimov and M. Schimmler (Germany)

392-217

Look-back Auction Algorithm for the Assignment Problem and Its Distributed Memory Implementation

L. Buš and P. Tvrđík (Czech Republic)

392-221

Parallel Analysis of the Rijndael Block Cipher

P. Brisk, A. Kaplan, and M. Sarrafzadeh (USA)

392-241

Scalable Parallel Algorithms for Difficult Combinatorial Problems: A Case Study in Optimization

F.N. Abu-Khzam, M.A. Langston, and P. Shanbhag (USA)

08:30 – SESSION 2 – SOFTWARE ARCHITECTURE

Chair:

Room: Peninsula

392-109

Event-driven Architectures for Distributed Crisis Management

K.M. Chandy, B.E. Aydemir, E.M. Karpilovsky, and D.M. Zimmerman (USA)

392-171

Investigations of Semantic Interoperability in Ubiquitous Computing Environments

R.E. McGrath, A. Ranganathan, M.D. Mickunas, and R.H. Campbell (USA)

392-173

First Experiences with SPIN, a Commodity Toolkit for Scientific Distributed Computing in Heterogeneous Environment

M. González (France)

392-204

Mobility and Replicability Patterns in Aspect-oriented Component-based Software Architectures

N.H. Ali, J. Silva, J. Jaen, I. Ramos, J.A. Carsí, and J. Pérez (Spain)

392-211

Realizing Distributed System Models with Programmable Networks

D. Houatra (France)

392-225

The Architecture of the Starfish System: Mapping the Survivability Space

K.P. Kihlstrom, P. Narasimhan, C. Phillips, C. Ritchey, and B. LaBarbera (USA)

08:30 – TUTORIAL – STATISTICAL TOOLS FOR RELIABLE PERFORMANCE EVALUATION

Presenter: D.L. Lilja (USA)

Room: Palisades

Computer architects and system designers have made tremendous advances in the performance of computer systems over the past several decades. However, measuring a computer system's performance can be problematic since performance is impacted by many different components in extremely complex and nonlinear ways. For example, it is well understood that simply increasing the clock rate will not necessarily produce a proportionate increase in the overall performance. These complex interactions introduce noise and uncertainty into our measurements of a system's performance, which makes it difficult to determine the impact any changes made to the system actually have on the overall performance. It also makes it difficult to directly compare the performance of different systems. This tutorial provides a gentle introduction to

some of the key statistical tools and techniques needed to interpret noisy performance measurements and to understand complex simulation results. It also presents techniques that can be used to appropriately design experiments to obtain the maximum amount of information for a given level of experimental effort.

In this tutorial, the participants will learn how to:

- Rigorously compare the performance of computer systems in the presence of measurement noise.
- Determine whether a change made to a system has a statistically significant impact on performance.
- Use statistical tools to reduce the number of simulations that need to be performed of a computer system.
- Design a set of experiments to obtain the most information for a given level of effort.

This tutorial is intended for application scientists and engineers, computer architects, compiler writers, and software designers who use or design high-performance computer systems. The level of the presentation is appropriate for both practitioners and graduate students. Experts from any scientific discipline will find this tutorial useful in helping to understand how to statistically analyze the performance of their systems and applications.

Prof. David J. Lilja received the Ph.D. and M.S. degrees, both in Electrical Engineering, from the University of Illinois at Urbana-Champaign, and a B.S. in Computer Engineering from Iowa State University in Ames. He is currently a Professor of Electrical and Computer Engineering, and a Fellow of the Minnesota Supercomputing Institute, at the University of Minnesota in Minneapolis. He also serves as a member of the graduate faculties in Computer Science and Scientific Computation, and was the founding Director of Graduate Studies for Computer Engineering. He has been a visiting senior engineer in the Hardware Performance Analysis group at IBM in Rochester, Minnesota, and a visiting professor at the University of Western Australia in Perth supported by a Fulbright award. Previously, he worked as a research assistant at the Center for Supercomputing Research and Development at the University of Illinois, and as a development engineer at Tandem Computers Incorporated (now a division of HP/Compaq) in Cupertino, California. He has served on the program committees of numerous conferences; was a distinguished visitor of the IEEE Computer Society; is a Senior member of the IEEE and a member of the ACM; and is a registered Professional Engineer. His primary research interests are in high-performance computer architecture, parallel computing, nanocomputing, hardware-software interactions, and performance analysis.

10:00 – 10:30 COFFEE BREAK

Room: Promenade Foyer

10:30 – SESSIONS 1 AND 2 AND TUTORIAL CONTINUED

14:00 – KEYNOTE LECTURE – ENERGY EFFICIENT COMPUTATIONS ON FPGAS

Presenter: V.K. Prasanna, USA

Room: Promenade

Prof. Viktor K. Prasanna (V.K. Prasanna Kumar) obtained his Ph.D. in Computer Science from the Pennsylvania State University. Currently, he is a Professor in the Department of Electrical Engineering as well as in the Department of Computer Science at the University of Southern California, Los Angeles. His research interests include parallel and distributed systems, embedded systems, configurable architectures, and high performance computing.

Prof. Prasanna is the Steering Co-chair of the International Parallel and Distributed Processing Symposium and is the Steering Chair of the International Conference on High Performance Computing (HiPC). He serves on the editorial boards of the Journal of Parallel and Distributed Computing and the Proceedings of the IEEE. He is the Editor-in-Chief of the IEEE Transactions on Computers. He was also the founding Chair of the IEEE Computer Society Technical Committee on Parallel Processing. He is a Fellow of the IEEE.

15:00 – 15:30 COFFEE BREAK

Room: Promenade Foyer

15:30 – SESSION 3 – NEURAL NETWORKS AND GENETIC ALGORITHMS

Chair:

Room: Venice

392-039

A Parallel Genetic Algorithm for the Steiner Problem in Networks

G. Di Fatta, G. Lo Presti, and G. Lo Re (Italy)

392-165

Parallelization of a Backpropagation Neural Network on a Cluster Computer

M. Pethick, M. Liddle, P. Werstein, and Z. Huang (New Zealand)

392-219

Asynchrony in a Distributed Modular Neural Network for Multimodal Integration

Y. Bouchut, H. Paugam-Moisy, and D. Puzenat (France)

**15:30 – SESSION 4 – SPECIAL SESSION:
SYNTHESIS FOR PROGRAMMABLE SYSTEMS**

Chairs:

Room: Pacific II

392-802

Hardware and Interface Synthesis of FPGA Blocks using
Parallelizing Code Transformations

*S. Gupta, M. Luthra, N. Dutt, R. Gupta, and A. Nicolau
(USA)*

392-803

Design Planning in Hardware Compilers

S.O. Memik (USA)

392-804

Scheduling on Heterogeneous Resources with
Heterogeneous Reconfiguration Costs

A. Nahapetian, S. Ghiasi, M. Sarrafzadeh (USA)

**15:30 – SESSION 5 – COMPILER AND RUN-TIME
SUPPORT**

Chairs:

Room: Promenade

392-019

Garbage Collection for Memory-constrained Java Virtual
Machines

T.S. Abdelrahman and S.R. Pande (Canada)

392-022

A Device Level Communication Library for the HPJava
Programming Language

S.B. Lim, B. Carpenter, G. Fox, and H.-K. Lee (USA)

392-179

Modeling and Retiming Non-uniform Acyclic Loops

P. Xue, H. Bui, A. Joseph, and N.L. Passos (USA)

392-236

Tiled Code Generation Method for Optimal DOALL
Parallel Processing

S. Lee and H. Aso (Japan)

**15:30 – SESSION 6 – PROGRAMMING LANGUAGES
AND SYSTEMS**

Chairs:

Room: Catalina

392-068

Distributed Execution of Multidimensional Programming
Languages

B. Lu, P. Grogono, and J. Paquet (Canada)

392-058

Design of a Compiler Framework in the GIPSY System

A.H. Wu, J. Paquet, and P. Grogono (Canada)

392-070

Assessment of Sequentel as a High-level Parallel
Programming Language

P. Andersen and D.E. Cooke (USA)

392-085

Meta Process Model: A New Distributed Shared Memory
Programming Model

H. Midorikawa (Japan)

392-086

Lilytask Programming Model and Its Implementations on
SMP & Cluster

T. Wang, N. Di, J. Shen, and Y. Tang (PRC)

**15:30 – SESSION 7 – PARALLEL I/O AND
DISTRIBUTED DATA**

Chairs:

Room: Peninsula

392-036

A New Parallel CBF Method for Shared-Nothing Cluster-
based Architecture

J.-W. Chang and Y.-K. Kim (Korea)

392-127

A Multithread NFS Client Architecture for the Multimedia
Cluster Generation

*T. Olivares, T. Cortes, L. Orozco-Barbosa, F.J. Quiles,
and A. Garrido (Spain)*

392-154

Adaptive File-Grain Distribution in a Cluster File System

Q. Huang, W. Zheng, G. Yang, Y. Wu, M. Shen (PRC)

392-186

Towards an Autonomic Storage System to Improve
Parallel I/O

F. Hidrobo and T. Cortes (Spain)

18:00 – OPTIONAL TOUR – LA BY NIGHT

Meeting Place: Hotel Main Lobby

Cost: \$55 USD per Person (tickets must be purchased in
advance)

It's a city of stars and sizzle; of excitement and energy;
of glamour and good times in the California sun. It's a
place called Los Angeles, and it waits to show off some
of its most fun and famous sights for you tonight! On
your way into the magic of Hollywood, you first drive past
downtown LA. Some of the highlights of downtown LA
include the Dorothy Chandler Pavilion that once hosted
the Academy Awards and the Staples Center. Learn
about the city's diverse history, from the days when
dinosaurs made the La Brea Tar Pits their sauna to
today's thriving multi-cultural metropolis.

A trip to Los Angeles is not complete without a stop in
the movie-making Mecca of the world. Hollywood is next

on tonight's itinerary, where you'll enjoy a visit to the famous Chinese Theater where you can match your footprints to your favorite stars. Next, visit the famous Hollywood Roosevelt Hotel, with its exhibit highlighting the history of filmmaking.

A short stroll across the street takes you to Hollywood and Highland. In 2002, the new Hollywood and Highland Complex Kodak Theater hosted its first Academy Awards, the first time the Oscars were held in Hollywood since the original ceremony at the Hollywood Roosevelt Hotel! It is here at the complex that you will enjoy dinner on the patio at California Pizza Kitchen. Following dessert, you will have time to stroll the ships, check out the entertainers, or just relax on a bench to see all the people that go to Hollywood and Highland to see and be seen.

Then it's off to Sunset Strip, where you get to see the excitement of LA! As you drive by the famous Strip don't forget to keep your eyes peeled for some famous faces! Lastly, no journey to Hollywood is complete without a look at the address synonymous with the rich and famous for over 50 years: Beverly Hills. The city is centered around beautiful Rodeo Drive, where, you'll drive past palm-lined drives that are graced by such names as Cartier, Armani, Saks and Tiffany. The history of downtown, the excitement of Hollywood, and the posh living of the rich and famous. It's all yours tonight . . . enjoy the magic!

TUESDAY, NOVEMBER 4, 2003

08:30 – SESSION 8 – SECURITY ISSUES

Chair:

Room: Promenade

392-243

Data Decoys for Confidentiality

D. Hart (USA)

392-008

Quantify Assurance from a Negative Perspective

Z. Liu and P. Wang (USA)

392-117

Collective Delegation using QoS Metrics

V. Manchala (USA)

392-145

ID-based Multicast Key Distribution Scheme for Mobile Ad Hoc Networks

S. Lee, K.H. Lee, J.B. Kim, and S.-K. Lee (Korea)

392-150

A Token-based Secure Routing Protocol in Ad-Hoc Networks

B.-N. Park, J.-W. Kim, and S.-K. Lee (Korea)

392-151

Different Key Establishment for Secure End-to-End Communications in Ad-Hoc Networks

H. Shim, H. Han, and S.-K. Lee (Korea)

08:30 – SESSION 9 – ROUTING TECHNIQUES

Chair:

Room: Pacific II

392-009

A Fault-tolerant Routing Strategy for Complete Josephus Cubes

P.K.K. Loh and W.J. Hsu (Singapore)

392-023

Disjoining Paths in Metacube

Y. Li, S. Peng, and W. Chu (Japan)

392-032

"Bmesh" Box-based Reconfigurable Mesh Architecture

M. Reza Salehnamadi (Iran)

392-157

Multicasting using WDM in Multifiber Optical Star Networks

R. Brandt and T.F. Gonzalez (USA)

392-168

A Link-disjointed Primary-backup Approach for Resorting Real-time 2-D Mesh Networks

H.-Y. Tu (USA)

392-189

An Optimal Fault-tolerant Broadcasting Algorithm in Voronoï Cellular Networks

A.-E. Baert and D. Semé (France)

392-201

Finding Two Disjoining Paths in a Network with Min-Min Objective Function

B. Yang, S.Q. Zheng, and S. Katukam (USA)

392-025

Larger Application Specific Permutation Networks for SIMD DSPs

T. Dräger, M.J. Bronzel, and G.P. Fettweis (Germany)

392-153

Efficient Algorithms for Single Link Failure Recovery and Its Application to ATM Networks

A.M. Bhosle and T.F. Gonzalez (USA)

392-220

Self-correcting Broadcast in Distributed Hash Tables

A. Ghodsi, L.O. Alima, S. El-Ansary, P. Brand, and S. Haridi (Sweden)

392-234

Stable iBGP through Selective Path Dissemination

R. Musunuri and J.A. Cobb (USA)

08:30 – SESSION 10 – WIRELESS NETWORKS

Chairs:

Room: Catalina

392-047

Power Aware Middleware

G. Kaefer, J. Haid, R. Schenner, and R. Weiss (Austria)

392-185

Location Pre-query Approach to IP Mobility

H. Xiaoying, J. Ying, and L. Zhenming (PRC)

392-199

An Enhancement of IEEE 802.11 for Efficient Operations in MANET

A. Chayabegara, S.M.S. Zabir, and N. Shiratori (Japan)

392-206

Connection Availability Model for Mobile Ad Hoc Networks using Reactive Routing Protocols

D. Trajanov, S. Filiposka, and A. Gnarov (Macedonia)

392-214

An Improved Mechanism to Detect Wireless Network Failures from MPI-2 Programs

E.M. Macías and A. Suárez (Spain)

392-216

An Approach for Efficient TCP Flow Control over Wireless Links

S.M.S. Zabir and N. Shiratori (Japan)

392-218

A Proactive Buffering Scheme to Improve Macro-mobility over Mobile IP

A. Khan, S.M.S. Zabir, and N. Shiratori (Japan)

392-248

Improving the Accuracy of Cell-based Positioning for Wireless Networks

R.-H. Jan, H.-C. Chu, and Y.-F. Lee (Taiwan)

392-196

A Software Monitoring Tool for Data Management on Mobile Devices

Y. Liu and D. Hart (USA)

392-254

Improvement of Robustness for Ad Hoc Networks through Energy-Aware Routing

V. Venugopal, R. Bartoš, M.J. Carter, and S.S. Mupparapu (USA)

08:30 – SESSION 11 – DISTRIBUTED COMPUTING

Chairs:

Room: Peninsula

392-015

Transversal Merge Operation and Nondominated Grid Coteries

T. Harada and M. Yamashita (Japan)

392-020

Enumerating Global States of a Distributed Computation

V.K. Garg (USA)

392-074

Group k-Mutual Exclusion for Distributed Systems

J.-R. Jiang (Taiwan)

392-097

An Optimal Byzantine Agreement Algorithm with Arbitrary Node and Link Failures

M. Biely (Switzerland)

392-102

Near-optimal Distributed Failure Circumscription

J. Beal (USA)

392-139

Prioritized h-Out of -k Mutual Exclusion for Mobile Ad Hoc Networks and Distributed Systems

J.-R. Jiang (Taiwan)

392-166

A Request-based Self-stabilizing Token Passing

J. Kuniwa (Japan)

392-232

Distributed Mutual Exclusion

N. Soundarajan and T.-H. Lai (USA)

392-257

Time-compatibility of a Workflow System

Z. Shan, T.-Y. Cheung (PRC)

10:30 – 11:00 COFFEE BREAK

Room: Promenade Foyer

11:00 – SESSIONS 8, 9, 10, AND 11 CONTINUED

14:00 – SESSION 12 – P2P AND GROUP COMMUNICATIONS

Chair:

Room: Promenade

392-063

Availability Analysis in Large Scale Multicast Networks

F. Dressler (Germany)

392-098

Improving Scalability and Reusability of Global Computing System using Peer-to-Peer Network
J. Han and D. Park (Korea)

392-159

Evaluation of Image Routing Algorithm on P2P Overlay Networks
Y. Kawai and R. Kadobayashi (Japan)

392-177

Emma Middleware: An Application-level Multicast Infrastructure for Multi-party Video Communication
T. Yamashita, H. Yamaguchi, K. Yasumoto, T. Highashino, and K. Taniguchi (Japan)

392-252

ALMAP, A Multicast Middleware in Efficient Realization of a Secure Group Key Management Protocol
S.T. Vuong and J. Shao (Canada)

14:00 – SESSION 13 – NETWORKS I

Chairs:

Room: Pacific II

392-053

Algorithms for Multiple IP Address Lookups
X. Chen and J. Shen (USA)

392-064

Connection History Management (CHM) Approach for Providing Web Server QoS and Security
S.-W. Shin, K.-Y. Kim, and J.-S. Jang (Korea)

392-237

A Set-based Approach to Packet Classification
V.P. Ranganath, and D. Andresen (USA)

392-121

Rate-limiting for Supporting the Fairness of Downstream in Ethernet-pon
C.K. Cho, H.K. Park, K.H. Ahn, Y.-C. Kim, and Y.C. Kim (Korea)

392-122

Computing Handover Failure Probability in Up/Down Link of LEO Satellite Networks with Satellite Fixed Cell
B.-J. Lee, X. Ying, and Y.-C. Kim (Korea)

392-169

The System Response Time of E-mail Servers Through Routers in WAN
Y.-W. Bai and C.-J. Cheng (Taiwan)

14:00 – SESSION 14 – HARDWARE DESIGN

Chairs:

Room: Catalina

392-113

A Processor Architecture for Simultaneously Processing Dataflow and Control-flow Threads
S. Ito, R. Kurebayashi, H. Tomiyasu, and H. Nishikawa (Japan)

392-228

A 64-Way SIMD Processing Architecture on an FPGA
R. Hoare, S. Tung, and K. Werger (USA)

392-247

Multi-tasking Hardware Design: Eliminating Overhead in a Multi-tasking Micro-Controller
R. Saraka, B. Wiwel, J. Maina, and R. Hoare (USA)

392-270

Optimizing Power While Exploiting Fine Grain Parallelsim on FPGAs
T. Jiang, X. Tang, A. Jones, and P. Banerjee (USA)

392-272

System Level Synthesis of Multiple IP Blocks in the Behavioral Synthesis Tool
R. Mukherjee, A. Jones, and P. Banerjee (USA)

14:00 – SESSION 15 – SCIENTIFIC COMPUTING

Chairs:

Room: Peninsula

392-041

A Heuristic Re-mapping Algorithm Reducing Inter-level Communication in SAMR Applications
J. Steensland and J. Ray (USA)

392-044

Adding Memory Resource Consideration into Workload Distribution for Software DSM Systems
Y.-T. Liu, T.-Y. Liang, and C.-K. Shieh (ROC)

392-066

Parallel Design of Multichannel Inverse Filters for Audio Reproduction
P. Alonso, J.M. Badía, A. González, and A.M. Vidal (Spain)

392-090

A New Hierarchical Parallel Algorithm on Molecular Dynamics Simulation
B. Wang, J. Shu, W. Zheng, J. Wang, and M. Chen (PRC)

392-120

Optimal Banded Triangular Solvers on k-Dimensional Torus Networks
E.E. Santos and E.S. Santos (USA)

392-175
Interior Point Methods for Joint Admission Control and Routing in MPLS Networks
K. Kuppuswamy and D.C. Lee (USA)

392-215
A Characteristic Algorithm for the 3D Navier-Stokes Equation using p2d2
S. Blazy and O. Marquardt (Germany)

15:00 – 15:30 COFFEE BREAK
Room: Promenade Foyer

15:30 – SESSIONS 12, 13, 14, AND 15 CONTINUED

19:00 – DINNER BANQUET
Room: Bayview

WEDNESDAY, NOVEMBER 5, 2003

08:30 – SESSION 16 – SCHEDULING AND RESOURCE ALLOCATION
Chair:
Room: Promenade

392-107
On Computation and Resource Management in Networked Embedded Systems
S. Ghiasi, K. Nguyen, E. Bozorgzadeh, and M. Sarrafzadeh (USA)

392-043
The Static-priority Scheduling of Periodic Task Systems upon Identical Multiprocessor Platforms*
S. Barush and J. Goossens (Belgium)

392-054
Simple and Straightforward Approach to Static Task Scheduling in a Homogeneous Computing Environment
T. Hagras and J. Janecek (Czech Republic)

392-077
A New Approach for Task Level Computational Resource Bi-partitioning
G. Wang, W. Gong, and R. Kastner (USA)

392-108
Bandwidth-aware Resource Allocation for Computing Independent Tasks in Heterogeneous Computing Systems
B. Hong and V.K. Prasanna (USA)

392-143
A Compile-time Task Scheduling Algorithm
T. Hagras and J. Janecek (Czech Republic)

392-163
Reliability Driven Task Scheduling for Heterogeneous Systems
Y. He, Z. Shao, B. Xiao, Q. Zhuge, and E. Sha (USA)

392-198
QoS-aware Scheduling for Multimedia Streaming in Interactive Video-on-Demand Systems
J. Martyna (Poland)

08:30 – SESSION 17 – WEB SERVICES AND TOOLS
Chairs:
Room: Pacific II

392-105
Janet's Abstract Distributed Service Component
P. Cappello (USA)

392-118
Fast Transparent Failover for Reliable Web Service
N. Aghdaie and Y. Tamir (USA)

392-162
Performance Impact of Web Services on Internet Servers
M. Tian, T. Voigt, T. Naumowicz, H. Ritter, and J. Schiller (Germany)

392-184
Asynchronous Peer-to-Peer Communication for Failure Resilient Distributed Genetic Algorithms
J.C.C. Litrá, X. Défago, and K. Satou (Japan)

392-203
Web-based Object-oriented Remote Control of Computer Hardware Interfaces
H. Liu, T.P. Skinner, and D.A. Perreault (USA)

392-223
N-JIS: A System for Web Services Integration in Java RMI Distributed Applications
M. Bianchi, C. Gaibisso, and G. Gambosi (Italy)

392-227
SOAP Optimization via Parameterized Client-side Caching
K. Devaram and D. Andresen (USA)

392-246
DHARMA: A Grid-enabled Domain-specific Metaware for Hydrology
D. Andresen, M. Neilsen, G. Singh, and P. Kalita (USA)

392-261
A Weblet Environment to Facilitate Proxy Caching of Web Processing Components
W. Hao, Q. Ma, I.-Ling Yen, and I. Chen (USA)

08:30 – SESSION 18 – DISTRIBUTED AGENTS

Chairs:

Room: Catalina

392-046

Design and Implementation of an Scalable Infrastructure for Autonomous Adaptive Agents*

J. Suzuki and T. Suda (USA)

392-050

Combining Matchmaking and Cooperation Forming of Agent Services

H. Lu (Australia)

392-052

Provision of Transparent Application Layer Diverse Protection Services based on Lightweight Software Agents in P2P Networks

C. Bachmeir and P. Tabery (Germany)

392-081

Execution Atomicity for Non-blocking Transactional Mobile Agents

S. Pleisch and A. Schiper (Switzerland)

392-083

Applying Mobile Agents to Changing Message Migration

X. Xu, Q. Zhan, and J. Yao (PRC)

392-133

A CORBA based Analysis of Multi Agent Behavior

S. Bhattacharya, A. Banerjee, S. Bandyopadhyay, and U. Bhattacharya (India)

392-222

Knowledge Inference for Mobile Monitoring

X. Zheng and D. Hart (USA)

08:30 – SESSION 19 – SOFTWARE SYSTEMS AND TOOLS

Chairs:

Room: Peninsula

392-030

PUBB2: A Redesigned Object-oriented Software Tool for Implementing Parallel and Distributed Branch-and-Bound Algorithms*

Y. Shinano, T. Fujie, and Y. Kounoike (Japan)

392-091

Java-based DSM with Object-level Coherence Protocol Selection

R. Kaiabachev and B. Richards (USA)

392-094

Cross-Platform Development of High Performance Applications using Generic Programming

W. Blochinger and W. Kuchlin (Germany)

392-101

Hem (p) - Heterogeneous MPI Environment on Grid

H. Sato (Japan)

392-103

NavP Versus SPMD: Two Views of Distributed Computation

L. Pan, L.F. Bic, M.B. Dillencourt, and M.K. Lai (USA)

392-104

USFMPI: A Multi-threaded Implementation of MPI for Linux Clusters

S.G. Caglar, G.D. Benson, Q. Huang, and C.-W. Chu (USA)

392-115

The Virtual Processor Interface: Linux Kernel Support for User-level Thread Systems

G.D. Benson, M. Butner, S. Padden, and A. Fedosov (USA)

392-193

Practical Schemes using Logs for Lightweight Recoverable DSM

Y. Kim, S. Park, S.R. Maeng (Korea)

392-249

Profiling Accuracy-Latency Characteristics of Collaborative Object Tracking Applications

S. Ghiasi, K. Nguyen, and M. Sarrafzadeh (USA)

392-271

Transformation Interface - ParInt

J. Van Voorst, A. Raju, E. de Doncker, and K. Kaugers (USA)

10:30 – 11:00 COFFEE BREAK

Room: Promenade Foyer

11:00 – SESSIONS 16, 17, 18, AND 19 CONTINUED

14:00 – SESSION 20 – LOAD BALANCING

Chairs:

Room: Promenade

392-156

A Static Load Balancing Algorithm via Virtual Routing

Z. Zeng and B. Veeravalli (Singapore)

392-170

Multiple Grouping for the Load Balance of a Web-cluster System

Y.-W Bai and C.-Y. Chen (Taiwan)

392-192

An Adaptive Load Balancing Technique for Distributed Virtual Environment Systems
P. Morillo, J.M. Orduña, M. Fernández, and J. Duato (Spain)

392-207

The Evaluation of Dynamic Load Balancing Algorithm on RHINET-2
A. Kitamura, K. Watanabe, T. Otsuka, and H. Amano (Japan)

392-210

Load Balancing Detecting Battery Energy Level and Wireless Beacon Strength
D. Sánchez, E.M. Macías, and Á. Suárez (Spain)

392-244

Enhancing Grid Utilization by Splitting and Merging Processes of a Job
K. Kiran and V. Sridhar (India)

392-269

Load Balancing in Distributed Adaptive Task Partitioning
C. Achalla, K. Kaugars, and E. de Doncker (USA)

14:00 – SESSION 21 – NETWORKS II

Chairs:

Room: Pacific II

392-176

Alternative File Transfer Mechanism for UNICORE: GridFTP
D. Breuer (Germany)

392-224

Design of Local Access Networks
R. Jothi and B. Rahavachari (USA)

392-245

A Hybrid Scheme for Transmission Schedules in Streaming Media
Z. Xia, I.-Ling Yen, D. Du, and P. Li (USA)

392-256

Performance Evaluation of a New Protocol for Home Network Control
S.-Y. Jung, T.-H. Kim, and W.-H. Kwon (Korea)

392-092

Fast Ethernet is Sometimes Faster than Gigabit Ethernet on LFN - Observation of Congestion Control of TCP Streams
M. Nakamura, M. Inaba, and K. Hiraki (Japan)

14:00 – SESSION 22 – GRID COMPUTING

Chairs:

Room: Catalina

392-016

Divisible Load Scheduling for Grid Computing
D. Yu and T.G. Robertazzi (USA)

392-049

Data Intensive Grid Scheduling: Multiple Sources with Capacity Constraints
H.M. Wong (Singapore), D. Yu (USA), B. Veeravalli (Singapore), and T.G. Robertazzi (USA)

392-062

Comparison of Centralized and Decentralized Service Discovery in a Grid Environment
S.A. Ludwig (UK)

392-078

Monitoring and Modeling Performance of Communications in Computational Grids
M.A. Frumkin and T.T. Le (USA)

392-229

Reliable Multicast Protocols for Java-based Grid Middleware Platforms
G. Fortino, W. Russo, and E. Zimeo (Italy)

392-231

Using Grid Benchmarks for Dynamic Scheduling of Grid Applications
M. Frumkin and R. Hood (USA)

14:00 – SESSION 23 – COMMUNICATION ISSUES

Chairs:

Room: Peninsula

392-200

CLUX: A Cluster-based Parallel/Distributed Environment
L. de Oliveira Rech, M. Bogo, J. Mazzucco Jr., L.F. Friedrich, and T.B. Corso (Brazil)

392-240

Evaluating Applications Performance in a Multi-networked Cluster
A. Alves, A. Pina, J. Exposto, and J. Rufino (Portugal)

392-251

Remote Shared Memory over Sun Fire Link Interconnect
A. Afsahi and Y. Qian (Canada)

392-253

Heterogeneous Channel Bonding Revisited
D. Andresen and S. Hanenkamp (USA)

392-800

Performance Evaluation of Local Communications: A Case-study
S.R. Alam, R.N. Ibbett, and F. Mallet (UK)

15:00 – 15:30 COFFEE BREAK

Room: Promenade Foyer

15:30 – SESSIONS 20, 21, 22, AND 23 CONTINUED

THURSDAY, NOVEMBER 6, 2003

09:15 – OPTIONAL TOUR – HIDDEN TREASURES OF THE CALIFORNIA COAST

Meeting Place: Hotel Main Lobby

Cost: \$75 USD (tickets must be purchased in advance)

Today is filled with the adventure and wonder of Southern California's most popular beaches. This exciting tour celebrates the pride of "Surf City USA," the sophistication of "The Colorful Coast," and the history of "The Artist's Colony." Come join us and discover the treasures of our beaches in a whole new way!

Start the day at Huntington Beach, which cemented its reputation as "Surf City USA" with its annual OP Pro World Surfing Championship and the world's first Surfing Walk of Fame. It is not hard to notice how this beach community got its nickname. Stroll down Main Street and visit the young, hip, eclectic shops that cover 3 blocks in all directions.

The experience continues southward to Newport Beach, known as "The Colorful Coast." Newport is the essence of sophistication and has a luxury lifestyle that just keeps getting bigger and better. This West Coast haven attracts those who work hard, those who used to work hard and those with no need to work at all. It is here that you'll enjoy lunch at another little hidden treasure. Time allows for you to take a short jaunt across the waters aboard the historical Balboa Island Ferry! This Ferry takes you to the old-fashioned boardwalk Balboa Island Fun Zone! Time allows for you to stroll the Fun Zone while the motor coach comes around to pick you up and take you to the next destination.

Next, you're off to a paradise often called "heaven on earth" because of its dramatic canyon walls and sweeping ocean vistas. It's "The Artist's Colony" of Laguna Beach, where the striking beauty of the winding coastline, suffused sunlight, and balmy climate have given inspiration to the many art galleries that line the shores of Laguna Beach. Stroll the art museums, artisans' studios and handicrafts boutiques for which Laguna is famous-or perhaps a peaceful respite on a Main Beach bench is your preference. Laguna has something for everyone!

Come raise a glass of sunshine with a nod to history, a wink to sophistication, and a smile of pride to the hidden treasures of the California coast!

*** Designates a paper nominated for the best paper award**

****The IASTED staff would like to thank you for attending this year's PDCS 2003 conference. Your participation has helped to make this international event a success, and we look forward to seeing you at upcoming IASTED events.****