

# FINAL PROGRAM

## FOR THE 2001 ACM SIGAPP SYMPOSIUM ON APPLIED COMPUTING

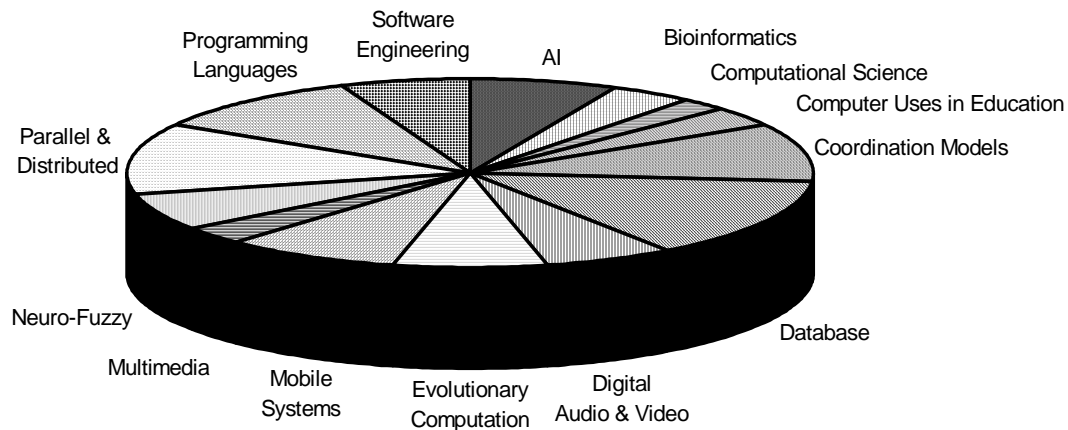
Alexis Park Resort, Las Vegas, Nevada, USA  
March 11–14, 2001

### Organizing Committee

**Gary Lamont**  
**Janice Carroll**  
**Hisham Haddad**  
**Don Morton**  
**George Papadopoulos**  
**Richard Sincovec**  
**Angelo Yfantis**

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attendees.  
See details  
page 2



Sponsored by  
**Symposium on Applied Computing (SIGAPP)**  
and  
**Symposium on Biomedical Computing (SIGBIO)**  
and  
**The University of Nevada at Las Vegas**



You are invited to Madrid, Spain! The host of SAC 2002. Please join us...

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## **SAC 2001 INTRODUCTION**

SAC 2001 is one of the premier conferences on applied computing and technology. SAC attendees will have the opportunity to hear from expert practitioners and researchers about the latest trends in research and development in their fields. SAC 2001 features 2 keynote speakers on Monday and Tuesday, from 8:30 to 10:00AM.

The symposium consists of tutorial and technical programs. The tutorial program offers 4 half-day and 2 full-day tutorials on Sunday March 11, 2001. Tutorials start from 9:00AM to 4:30PM in 2 concurrent sessions. This years tutorials focus on different areas, including technology application in Bioinformatics, Computational Science, Parallel Programming, Internet Agents, and Digital Video and Audio. The technical program offers 14 tracks that run from Monday March 12 through Wednesday March 14, 2001. Sessions start from 8:30AM to 5:30PM in 4 concurrent sessions.

### **SAC 2001 Organizers**

Gary Lamont, *Symposium Chair*

Air Force Institute of Technology, Dayton, Ohio

Angelo Yfantis, *Symposium Vice Chair*

University of Nevada at Las Vegas, Nevada

Jan Carroll, *Symposium Director*

Roger State University, Claremore, Oklahoma

Hisham Haddad, *Program Chair*

NetReach, Inc., Ambler, Pennsylvania

George Papadopoulos, *Program Co-Chair*

University of Cyprus, Nicosia, Cyprus

Richard Sincovec, *Tutorials Chair*

University of Nebraska, Lincoln, Nebraska

Don Morton, *Treasurer/Registrar*

University of Montana, Missoula, Montana

Ying Yang, *Webmaster*

University of Nevada at Las Vegas, Nevada

### **SAC 2001 Tracks**

#### **AI and Computational Logic:**

Track Chairs: Chih-Cheng Hung and Agostinho Rosa

#### **Bioinformatics:**

Track Chairs: Warren Jones and Todd Wareham

Session Chairs: Peter Tolia and Roman Osman

#### **Computational Sciences:**

Track Chair: S. Lakshmiarahan

Session Chair: Jonathan Dowell

#### **Computer Uses in Education:**

Track Chair: Malini Krishnamurthi

#### **Coordination Models, Languages and Applications:**

Track Chair: Andrea Omicini

Session Chairs: David Flater, Ronaldo Menezes, and Antonio Brogi

#### **Database Technology:**

Track Chair: Ramzi A. Haraty

Session Chairs: Brajendra Panda, Muhammad Anwar, Sara Comia, and Reda Alhajj

#### **Digital Audio and Video:**

Track Chair: Angelo Yfantis

Session Chair: A. Angelopoulos

#### **Evolutionary Computation and Optimization:**

Track Chairs: Roger Wainwright and Guenther Raidl

Session Chairs: Kay Wiese and Bryant Julstrom

#### **Mobile Computing Systems and Applications:**

Track Chairs: Dorota Huizinga and Massimo Ancona

Session Chair: Jie Li

#### **Multimedia and Visualization:**

Track Chairs: Jay Bhuyan and Brajendra Panda

Session Chair: Chaman Sabharwal

#### **Neuro-Fuzzy Applications:**

Track Chairs: Ernesto Damiani and Athanasios Vasilakos

#### **Parallel and Distributed Computing:**

Track Chairs: Pradip Srimani and Mahmoud Omari

Session Chairs: Zhizhang Shen, Li-jie Jin, Daniel Pressel, and Claudia Leopold

#### **Programming Languages:**

Track Chair: Chang-Hyun Jo

Session Chairs: Barrett Bryant, Brian Malloy, and Marjan Mernik

#### **Software Engineering and Management:**

Track Chair: David Rine

Session Chair: Yih-Feng Hwang

### **SAC 2001 Sponsors**

SAC 2001 is sponsored by ACM Special Interest Group on Applied Computing (SIGAPP) and in co-operation with the Special Interest Group on Biomedical Computing (SIGBIO). Special thanks to the Chairs of SIGAPP and SIGBIO.

#### **ACM SIGAPP**

The ACM Special Interest Group on Applied Computing is ACM's primary applications-oriented SIG. SIGAPP offers practitioners and researchers the opportunity to share mutual interests in innovative applications, technology transfer, experimental computing, strategic research, and the management of computing. This SIG also promotes widespread cooperation among business, government, and academic computing programs. Its annual conference on applied computing provides a forum for presentation of the results of strategic research and experimentation. The SIG newsletter, Applied Computing Review, is published twice annually. Membership in SIGAPP is open to ACM members for \$15 per year (\$8 for students) and \$30 for non-ACM members. For information contact Gary Lamont (937) 255-3450x4718 or [gary.lamont@afit.af.mil](mailto:gary.lamont@afit.af.mil).

#### **ACM SIGBIO**

The ACM Special Interest Group on Biomedical Computing joins the interests of computer scientists and professionals in the health and biological sciences. Although traditionally emphasizing medical informatics, SIGBIO has expanded its scope to include other topics - e.g., multimedia and molecular databases. The SIG co-sponsors a number of conferences and workshops that reflect its multidisciplinary interests. SIGBIO Newsletter publishes quarterly. Membership in SIGBIO is open to ACM members for \$20 (\$7 for students) and \$28 for non-ACM members. For Information, contact Edward Lamie, [lamie@altar.csustan.edu](mailto:lamie@altar.csustan.edu) or (209) 667-3183.

## Airline Arrangement

ACM has secured agreements with United Airlines and American Airlines for SAC 2001 attendees. Please check the special offers noted at the following URLs to receive discounted fares.

United Airlines:

[http://www.acm.org/sig\\_volunteer\\_info/united.html](http://www.acm.org/sig_volunteer_info/united.html)

American Airlines:

[http://www.acm.org/sig\\_volunteer\\_info/american.html](http://www.acm.org/sig_volunteer_info/american.html)

## MESSAGE FROM THE CONFERENCE CHAIR

### Gary Lamont

Welcome to the 16th Annual ACM Symposium on Applied Computing (SAC 2001) in Las Vegas, Nevada! Thanks for attending an international scientific forum for computer scientists and engineers that includes many computational ideas and a spectrum of applications.

SAC is a conference devoted to the study of real-world problem applications using a variety of computation algorithms. As such, it provides an avenue for discussion and exchange of new ideas, associated computation algorithms, and interesting complex applications. The Symposium is rightly sponsored by the ACM Special Interest Group on Applied Computing (SIGAPP) whose mission is to further the interests of the computing professional engaged in the development of new computing applications, interdisciplinary applications areas, and applied research. Thus, the spectrum of SAC applications covers databases and computational finance to evolutionary algorithms, software engineering, and parallel and distributed computing plus others designed to provide a wide range of topics as reflected in the SAC 2001 track listing. Note that the Biomedical Computing ACM SIG, SIGBIO, is cosponsoring the Symposium with a new innovative bioinformatics track and associated tutorial and plenary session.

Each of the SAC 2001 tracks is organized by a talented track chair whose names are listed in the proceedings. Many thanks to them, the paper reviewers, the plenary speakers, and the presenters as well as the organizing committee for their many hours of volunteer work that contribute to a successful SAC 2001. In particular, we should thank Hisham Haddad and George Papadopoulos for providing a well organized program, Jan Carroll for managing the publishing of the new CD proceedings, Angelo Yfantis for being the vice-chair and providing for local arrangements as hosted by the University of Nevada, Richard Sincovec for arranging the tutorials, and Don Morton for taking on for the first time the critical role of treasurer/registrar. All elements of the Symposium are guided by the enthusiasm, foresight, and dedication of these professionals. Join our group in support of SAC 2002!

Again welcome to SAC 2001 and Las Vegas. We hope that you will leave enriched with new friends and new ideas having enjoyed the ambiance of Las Vegas. In the future, we encourage you and your colleagues to submit papers and attend SAC 2002.

## MESSAGE FROM THE PROGRAM CHAIRS

### Hisham Haddad and George Papadopoulos

Welcome to the 16<sup>th</sup> Symposium on Applied Computing (SAC 2001). During the past 15 years, the Symposium provided an opportunity for researchers and practitioners to present their findings and results in the areas of computer applications and technology. This year, the technical program is designed to include a wide range of tracks covering major areas of computer applications. Highly qualified referees with strong expertise and special interest in their respective research areas carefully reviewed submitted papers. In addition, the technical program includes a tutorial program offering 4 half-day and 2 full-day tutorials. The tutorials are described later in this program. This year we extend the technical program one additional day to minimize parallel sessions and give you the opportunity to attend more sessions in different tracks.

SAC 2001 would not be possible without submissions and contributions from members of the scientific community like you. As anyone can imagine, many people put tremendous time and effort over the period of 9 to 10 months to bring you an excellent program. The success of SAC 2001 relies on the effort and hard work of many volunteers. On behalf of SAC 2001 Program Committee, we would like to take this opportunity to thank all of those who made this years technical program a reality, including speakers, referees, track chairs, session chairs, presenters, and attendees. We also thank the local arrangement committee lead by Professor Angelo Yfantis, Director of Image Processing and Computer Graphics Lab at the University of Nevada, Las Vegas.

SAC 2001 proceedings will be available in both electronic and printed formats. This year, the technical program received 224 submissions, from which 118 papers were strongly recommended for acceptance by the referrers and appear in the Conference Proceedings. The technical program accepted recommended papers as follows: 115 papers as full papers, and 4 papers as short papers. This gives SAC 2001 an acceptance rate of 53%.

We hope you will enjoy the meeting and have the opportunity to share your ideas, get new ideas, and meet new friends. We also hope you will enjoy your stay in Las Vegas and take pleasure from the many entertainment and activities that the city has to offer. We also look forward to your active participation in SAC 2002, and encourage you and your colleagues to submit your research findings to next year's technical program. Thank you for being part of SAC 2001.

## OTHER ACTIVITIES

- 1) SAC 2001 Review meeting, Sunday, from 5:30 to 6:30PM, room Apollo 1
- 2) Reception for all registrants, Sunday, at 6:30PM, room Parthenon 2
- 3) Lunch for all conference registrants, Monday, from noon to 1:30PM, room Parthenon 2. Lunch speaker is Dr. Clifford Kuhn.

- 4) SIGAPP Business meeting, Monday, from 5:30 to 6:30, room Apollo 1.
- 5) SAC 2002 Organization meeting, Tuesday, from 5:30 to 6:30PM, room Apollo 1.
- 6) Banquet for all conference registrants, Tuesday, at 7:00PM, room Parthenon 2
- 7) Track Chairs luncheon, Wednesday, from Noon to 1:30PM, Alexis Gardens room
- 8) SAC 2001 wrap-up meeting, Wednesday from 5:30 to 6:30PM, room Apollo 1.

## **SAC 2002**

Next year symposium will be hosted by the Carlos III University of Madrid, Spain. Please visit SAC 2001 website for posting of SAC 2002 Call For Track Proposals and Call For papers. SAC 2002 will take place from March 10 - 13, 2002.

### **KEYNOTE ADDRESS**

#### **Whole Genome Assemblies of the Drosophila and Human Genomes**

Professor Gene Myers  
Celera Genomics

Monday March 12, 2001, 8:30AM – 10:00AM  
Athena Room

Shotgun sequence assembly is a classic inverse problem: given a set of segments randomly sampled from a target sequence, the problem is to reconstruct the target. Early programs for this problem assisted a user by finding potential overlapping segments, which were then assembled by hand. As the programs became progressively more sophisticated the problem was completely solved by the software but still followed by a manual curatorial pass by the users. Until 1995 it was believed that the practical limit on the size of problems that could be solved was on the order of 30 to 50Kbp, due to the intrinsic difficulties posed by repetitive sequence in the target. In 1995 the assembly of a whole genome shotgun dataset for H. Influenza dispelled the notion of such a barrier. While the process involved significant human curation and bacterial genomes are less repetitive than those of higher organisms, it still portended an economy of effort unmatched by the more laborious map-based approaches then being pursued for large genomes. In 1996, Weber and Myers proposed a whole genome shotgun approach for the human genome suggesting a protocol that involved sampling several individuals in order to simultaneously obtain polymorphism information. Critics claimed that the computation would involve an impossible amount of computer time, that the size and repetitiveness of the genome would confound all attempts at assembly should sufficient computer efficiency be achieved, and that even if an assembly were produced it would be of an extremely poor quality and partial nature.

In 1999 the informatics research team at Celera produced an assembly of the Drosophila genome from a whole genome

shotgun data set consisting of 3.2 million reads, 72% of which were paired-end reads from 2Kbp and 10Kbp inserts in a 1 to 1.32 mix. The assembly consisted of completely ordered and oriented contigs covering an estimated 97.2% of the genome with only 1630 gaps of average size 1,415bp. The smaller gaps were PCR closed by the Berkeley Drosophila project in a three-month period following the publication of the assembly, and the remaining gaps closed in the ensuing 6 months. The assembly is consistent with STS maps and physical clone maps and was compared against 24% of the genome independently sequenced by other groups. The sequence level comparison revealed that the sequence is better than 99.998% accurate within non-repetitive regions of the assembly and 99.62% accurate within repetitive constructs. The basic conclusion is that whole genome assembly is not only feasible but produces a high-quality result that requires comparatively little finishing work.

In this talk, we will cover the approaches to sequencing whole genomes, illustrate the key computational steps of Celera's whole genome assembler in an attempt to explain what the critics didn't understand, and describe our current strategies and progress towards a penultimate assembly of the human gen.

Gene Myers is Vice President of Informatics Research at Celera Genomics where he is building next generation genomic analysis software and an assembler for the whole-genome shotgun sequencing of the Drosophila and Human genomes. He is also currently on leave from the Department of Computer Science at the University of Arizona where he has served on the faculty after receiving his Ph.D. from the University of Colorado in 1981. His research interests include the design of algorithms, pattern matching, computer graphics, and computational molecular biology. His most recent work has focused on algorithms for the central combinatorial problems involved in DNA sequencing, and on a wide range of sequence and pattern comparison problems. Among the tools he has developed are Blast—a widely used tool for protein similarity searches, FAKtory—a system to support DNA sequencing projects, Anrep—a pattern matching language for applications in molecular biology, and Mac- & PC-Molecule—a molecular visualization tool for Apple and Wintel computers. Dr. Myers is on the editorial boards for the Journal of Computational Biology and BioInformatics, and on the board of the International Society for Computational Biology.

### **KEYNOTE ADDRESS**

#### **A Decade of Applied Computing**

Professor Hal Berghel  
University of Nevada at Las Vegas  
Tuesday March 13, 2001, 8:30AM – 10:00AM  
Athena Room

As we close out the first full decade of the ACM Special Interest Group on Applied Computing, the ACM Symposium on Applied Computing, and the ACM SIGAPP newsletter, Applied Computing Review, it may be useful to review some of the events that have taken place since their inception from



of multi-agent Internet applications is first discussed in general and compared, then shown in the context of two application examples. In particular, cooperative information retrieval and conference management are taken as meaningful case studies throughout the tutorial to evaluate the impact of different coordination models and architectures in application design, development and execution.

**9:00AM – 4:30PM**

**APOLLO 2**

### **TUTORIAL 3**

#### **A SURVEY OF PARALLEL PROGRAMMING MODELS**

Claudia Leopold

The tutorial provides an introduction into the area of parallel programming. It explains and compares the major programming models that are in current use (data parallelism, shared-memory programming, message passing), and outlines many less well-known proposals. By placing emphasis on the fundamental pros and cons of the various approaches, it presents a big picture view of the field. More specific details of particular languages and systems are omitted. The tutorial is designed primarily for practitioners who do not yet have experiences with parallelism, but think about adopting it in the future. The tutorial draws on material from a book by the same author (Parallel and Distributed Computing: A Survey of Models, Paradigms, and Approaches, John Wiley & Sons 2000, to appear).

**9:00AM – 4:30PM**

**APOLLO 3**

### **TUTORIAL 4**

#### **DIGITAL VIDEO AND AUDIO**

Angelo Yfantis

The tutorial covers a number of topics on digital video and digital audio. These topics are:

- 1) Still Photography Compression Lossless vs. Lossy: Compression Components: Transformation, Quantization, Encoding, DCT based compression-JPEG (Joint Photographers Expert Group), and Wavelet based Compression.
- 2) Video Compression: The MPEG (Motion Picture Expert Group) Standards. MPEG1, MPEG2, MPEG4 and MPEG7 standards. Motion detection, Motion estimation, Motion compensation, and Motion-Noise separation. Video Formats: NTSC, PAL-SECAM, Digital Television formats, Interlaced vs. Progressive video. Video compression and Video Transmission over IP with applications to video security, video Telephony, Telemedicine, Digital Medicine.
- 3) The convergence of Digital Television Technology to the Computer Technology.
- 4) Digital Voice Sampling rate Quiet periods, noise filtering, voiced and unvoiced components. Phonemes of the English language. Speaker recognition, and Speech recognition. Voice compression, and its application to digital telephony, wireless communication, voice interactive games, and voice over IP.

The tutorial speakers are Alex Popovich, Angelos Angelopoulos, Theo Lazarakis, and Jason Ellison.

**1:30 – 4:30PM**

**ATHENA**

### **TUTORIAL 5**

#### **INTRODUCTION TO BIOINFORMATICS**

M. T. Hallett

The goal of this tutorial is to provide computer scientists/engineers possessing no previous knowledge of bioinformatics a “detailed overview” of the current problems and challenges facing researchers. The tutorial consists of three parts: molecular sequences and genomics, proteomics, and functional genomics. Major results, open questions, and how these problems are solved in practice will be addressed.

Molecular sequences and genomics will be devoted to the now classical problems of bioinformatics that revolve around molecular sequences both at the DNA and amino acid level. The two main problems here that will serve as the backbone are pairwise sequence alignment and phylogenetic tree construction. Sequencing and mapping problems, gene finding, intron/exon detection, distance estimates via Markovian models of evolution, pair wise transition matrices, multiple sequence alignment, and secondary structure prediction will be described briefly.

Proteomics addresses how this information can be used. Secondary structure prediction software PHD and SAINT are used to predict structural information within amino acid sequences. Classical ways to predict structure such as molecular modeling techniques, NMR, and X-ray crystallography are mentioned. The use of mass spectrometry for bacterial cell identification will be introduced.

The functional genomics portion of this tutorial will introduce some of the problems associate with predicting function of a molecule via non-structure-based techniques. One of the most promising techniques is DNA microarrays. The focus here will be on cell classification problems. The tutorial will conclude with a discussion of new concepts such as universal microarrays and some of the attempts to bring proteomics and genomics together.

**1:30 – 4:30PM**

**APOLLO 1**

### **TUTORIAL 6**

#### **RELATIONSHIP ANALYSIS: A SYSTEMATIC APPROACH TO LINKING ON THE WEB**

Michael Bieber

Links on the World Wide Web implement relationships. Many relationships in information domains are implicit, and only become obvious through a systematic analysis. Therefore, many Web sites are missing useful links, opening up opportunities for enhancing systems or providing third party services.

Most Web design methodologies assume you know the set of objects and links you want to include in your Web site. But coming up with this set is not a straightforward task. Relationship Analysis uniquely focuses on the relationships in a complex system or information domain. It provides a systematic approach to determining the set of relevant objects and links to include in the design of a Web application, a Web

interface to analytical, legacy and back-office applications, as well as non-Web applications.

Relationship Analysis helps the analyst determine a cluster of relationships around "elements of interest" in the system's domain. Elements of interest become the objects with anchors on your Web site. The relationships become the set of multiple links users access when clicking on each anchor.

Relationship Analysis is a brainstorming technique, based on a theoretical taxonomy of relationship types. The tutorial will cover the precursor steps of determining the various stakeholders interested in your application and determining the objects they will want to see. We next shall study the systematic brainstorming approach Relationship Analysis provides to teasing out the relationships within a domain. We then shall practice with a hands-on exercise. We shall conclude with a review of the research issues in relationship Analysis.

The intended audience includes people who design or enhance software applications and Web sites, people interested in ways to understand complex systems, or simply anyone intrigued by and who wish to explore the very rich concept of hypermedia and interrelationships. No prerequisite experience is required.

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**SUNDAY, 5:30 – 6:30PM** **APOLLO 1**

**SAC 2001 REVIEW MEETING**

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**SUNDAY, 6:30PM** **PARTHENON 2**

**RECEPTION**



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**MONDAY MARCH 12, 2001**

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**7:30AM – 5:00PM** **FOYER**

**REGISTRATION**

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**8:15 – 8:30AM** **ATHENA**

**OPENING COMMENTS**

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**8:30 – 10:00AM** **ATHENA**

**KEYNOTE ADDRESS**

**Whole Genome Assemblies of the Drosophila and Human Genomes**  
Professor Gene Myers, Celera Genomics

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**MONDAY, 10:00 – 10:30AM** **BREAK**

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**10:30 – NOON** **ATHENA**

**BIOINFORMATICS - 1**

*Peter Tolia, Public Health Research Institute and UMD-New Jersey Medical School, Newark, NJ, USA*

**Computational Structural Genomics: Finding Protein Targets for Structural Studies**

Igor V. Grigoriev, Sung-Hou Kim, University of California, Berkeley, USA

**Perfect Phylogenetic Networks with Recombination**

Lusheng Wang, City University of Hong Kong, Hong Kong  
Kaizhong Zhang, University of Western Ontario, Canada  
Louxin Zhang, National University of Singapore, Singapore

**Identifying the Most Significant Pairwise Correlations of Residues in Different Positions of Helices: The Subset Selection Problem Using Least Squares Optimization**

Xianghong Zhou, Gaston H. Gonnet, ETH Zurich, Switzerland

Michael Hallett, McGill University, Canada  
Gareth Chelvanayagam, University of Western Australia, Australia

Gerd Folkers, ETH Zurich, Switzerland

**10:30 – NOON**

**APOLLO 1**

**AI AND COMPUTATIONAL LOGIC - 1**

*Chih-Cheng Hung, Southern Polytechnic State University, Marietta, GA, USA*

**On Verifying Game Designs and Playing Strategies using Reinforcement Learning**

Dimitrios Kalles, Panagiotis Kanellopoulos, Computer Technology Institute, Greece

**A New Decomposition Technique for Solving Markov Decision Processes**

Pierre Laroche, Univesite de Metz, France  
Yann Boniface, LORIA, France  
René Schott, IECN and LORIA, France

**Automatic Symmetry Breaking Method Combined with SAT**

Jian Zhang, Chinese Academy of Sciences, China

**A Belief-Goal-Role Logic for a Single-Agent System**

Walid Chainbi, ENIS, TUNISIA

**10:30 – NOON**

**APOLLO 2**

**PROGRAMMING LANGUAGES - 1**

*Barrett Bryant, UAB, Birmingham, AL, USA*

**A Web Information and Management System (WIOMS)**

Tynam D. Grayson, Ralph A. Grayson, G. E. Hedrick, Oklahoma State University, USA

**Formal Semantics of an Algorithm for Translating Model-based Specifications to Concurrent Constraint Programs**

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Tim Wahls, Penn State Harrisburg, USA  
Gary T. Leavens, Iowa State University, USA

**Specifying Internet Applications with DiCons**

J.C.M. Baeten, H. M. A. van Beek, S. Mauw, Eindhoven  
University of Technology, The Netherlands

**10:30 – NOON**

**APOLLO 3**

**DATABASE TECHNOLOGY - 1**

*Ramzi Haraty, Lebanese American University, Beirut,  
Lebanon*

**Automatic Generation of Hypertextbook Webs**

Franco Crivellari, Massimo Melucci, University of Padova,  
Italy

**Access to Heterogeneous Data Sources for  
Supporting Business Process Execution**

Martin Staudt, Jorg-Uwe Kietz, Ulrich Reimer, Swiss Life,  
Switzerland

**Global Change Master Directory: Object-oriented  
Active Asynchronous Transaction Management in a  
Federated Environment Using Data Agents**

Zina Ben Miled, Srinivasan Sikkupparbathyam, Omran  
Bukhres, Kishan Nagendra, Eric Lynch, Marcelo Areal,  
Indiana University Purdue University, USA  
Lola Olsen, Chris Gokey, David Kendig, Tom Northcutt,  
Rosy Cordova, Gene Major, Janine Savage, NASA/Goddard  
Space Flight Center, USA

**Integrating OO Road Network Database, Cases and  
Knowledge for Route Finding**

Muhammad Abaidullah Anwar, Takaichi Yoshida, Kyushu  
Institute of Technology, Japan

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**MONDAY, NOON – 1:30PM**

**PARTHENON 2**

**FEATURING LUNCH SPEAKER**

**PROFESSOR CLIFFORD KUHN, UNIVERSITY OF  
LOUISVILLE SCHOOL OF MEDICINE**

**Open Wide and Say HA!!!!: Enhance Your  
Humor Skills**

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**1:30 – 3:00PM**

**ATHENA**

**BIOINFORMATICS - 2**

*Roman Osman, Mount Sinai School of Medicine, New York  
City, NY, USA*

**An Approximation Algorithm for the Shortest  
Common Supersequence Problem: An Experimental  
Analysis**

Paolo Barone, Paola Bonizzoni, Gianluca Della Vedova,  
Giancarlo Mauri, Universita degli Studi di Milano, Italy

**Picking Fruit From the Tree of Life: Comments on  
Taxonomic Sampling and Quartet Methods**

Jonathan H. Badger, Paul Kearney, University of Waterloo,  
Canada

**1:30 – 3:00PM**

**APOLLO 1**

**AI AND COMPUTATIONAL LOGIC - 2**

*Agostinho Rosa, LaSEEB - ISR - IST, Av. Rovisco Pais,  
Lisboa - Portugal*

**Interactive Document Retrieval with Relational  
Learning**

Masayuki Okabe, Seiji Yamada, Tokyo Institute of  
Technology, JAPAN

**A Comparison in Training Time of the Single and  
Multiple-Output MLP Neural Networks**

Matee Serearuno, Tony Holden, University of Cambridge,  
UK

**A Multi-Neural-Network Learning for Lot Sizing and  
Sequencing on a Flow-Shop**

In Lee, Seton Hall University, USA  
Jatinder N.D. Gupta, Ball State University, USA  
Amar D. Amar, Seton Hall University, USA

**1:30 – 3:00PM**

**APOLLO 2**

**PROGRAMMING LANGUAGES - 2**

*Brian Malloy, Clemson University, Clemson, SC, USA*

**Using the Object Paradigm to Deal with the Agent  
Paradigm: Capabilities and Limits**

Walid Chainbi, ENIS, Tunisia

**Design and Implementation of Simple Object  
Description Language**

Marjan Mernik, Uros Novak, Enis Avdicausevic, Mitja Lenic,  
and Viljem Zumer, University of Maribor, Slovenia

**Reflective Controls for Intelligent Distributed  
Objects**

En-Hsin Huang, Lucent Technologies, USA  
Tzilla Elrad, Illinois Institute of Technology, USA

**1:30 – 3:00PM**

**APOLLO 3**

**DATABASE TECHNOLOGY - 2**

*Brajendra Panda, University of North Dakota, Grand Forks,  
ND, USA*

**Transferring Database Contents from a  
Conventional Information System to a  
Corresponding Existing Object Oriented Information  
System**

Reda Alhadj, American University of Sharjah, UAE  
Faruk Polat, Middle East Technical University, Turkey

**Integrating Relational Database Schemas using a  
Standardized Dictionary**

Ramon Lawrence, University of Manitoba, Canada



Ken Barker, University of Calgary, Canada

**Batch-Construction of B+-Trees**

Sang-Wook Kim, Kangwon National University, Korea  
Hee-Sun Won, Electronics and Telecommunications Research Institute, Korea

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**MONDAY, 3:00 – 3:30PM** **BREAK**

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**3:30 – 5:00PM** **ATHENA**

**BIOINFORMATICS CURRICULA PANEL**

*Michael Recce, New Jersey of Technology, Newark, NJ, USA*

Panelists

Paul Kearney, University of Waterloo  
Daniel Davison, Bristol-Myers Squibb  
Peter Toliás, New Jersey Medical School  
John Salerno, Rensselaer Polytechnic Institute  
Warren Jones, University of Alabama at Birmingham

**3:30 – 5:00PM** **APOLLO 1**

**SOFTWARE ENGINEERING AND MANAGEMENT - 1**

*David Rine, George Mason University, USA*

**A Seamless Approach to the Agent Development**

Chang-Hyun Jo, University of North Dakota, USA

**A Graphical User Interface for Executing Formal Specifications**

Xiaowen Chen, Tim Wahls, Penn State Harrisburg, USA

**A Distributed Object Computing Architecture for Leveraging Software Reengineering Systems**

Chia-Chu Chiang, Allen Systems Group, USA

**The Design of an OCL Query-Based Debugger for C++**

*Chanika Hobatr, Brian A. Malloy, Clemson University, USA*

**3:30 – 5:00PM** **APOLLO 2**

**PROGRAMMING LANGUAGES – 3**

*Barrett Bryant, UAB, Birmingham, AL, USA*

**eLePUS – A Language for Specification of Software Design Patterns**

Rajeev R. Raje, Sivakumar Chinnasamy, Indiana University Purdue University, USA

**Program Slicing Based on Specification**

I. S. Chung, Hansung University, Korea  
W. K. Lee, Jeonju University, Korea  
G. S. Yoon, Y. R. Kwon, KAIST, Korea

**Parametric Polymorphism in Java: An Efficient Implementation for Parametric Methods**

Mirko Viroli, DEIS-Universita degli Studi di Bologna, Italy

**3:30 – 5:00PM**

**APOLLO 3**

**DATABASE TECHNOLOGY - 3**

*Muhammad Anwar, Kyushu Institute of Technology, Iizuka Japan*

**Design and Analysis of Data Structures for Querying Image Databases**

Yuelong Gu, Brajendra Panda, Kazi A. Haque, University of North Dakota, USA

**Transaction Fusion in the Wake of Information Warfare**

Brajendra Panda, Rajesh Yalamanchili, University of North Dakota, USA

**Segment-Based Approach for Subsequence Searches in Sequence Databases**

Sanghyun Park, University of California-Los Angeles, USA  
Sang-Wook Kim, Kangwon National University, Korea  
Wesley Chu, University of California-Los Angeles, USA

**An Efficient Core-Area Detection Algorithm for Fast Noise-Free Image Query Processing**

Khanh Vu, Kien A. Hua, Duc A. Tran, University of Central Florida, USA

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**MONDAY, 5:30 – 6:30PM**

**APOLLO 1**

**SIGAPP BUSINESS MEETING**

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**TUESDAY MARCH 13, 2001**

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**7:30AM – 5:00PM**

**FOYER**

**REGISTRATION**

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**8:15 – 8:30AM**

**ATHENA**

**OPENING COMMENTS**

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**8:30 – 10:00AM**

**ATHENA**

**KEYNOTE ADDRESS**

**A Decade of Applied Computing**

Hal Berghel, University of Nevada, Las Vegas

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**TUESDAY, 10:00 – 10:30AM**

**BREAK**

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**10:30 – NOON**

**ATHENA**

**MOBILE COMPUTING SYSTEMS AND APPLICATIONS - 1**

*Dorota Huizinga, California State University, Fullerton, USA*

**Analysis of Dynamic Movement-Based Location Update Scheme for PCS Networks**

Jie Li, University of Tsukuba, Japan,

Yi Pan, Georgia State University, USA  
Xiaohua Jia, City University of Hong Kong, China

**Location Management of Mobile Hosts by Grouping Routers**

Hiroaki Hagino, Takahiro Hara, Masahiko Tsukamoto,  
Shojiro Nishio, Osaka University, Japan

**User Profile Replication with Caching for Distributed Location Management in Mobile Communication Networks**

Hoang Nguyen Minh, Harmen R. van As, Vienna University  
of Technology, Austria

**A Generalized Air-Cache Design for Efficiently Broadcasting on Multiple Physical Channels**

Duc A. Tran, Kien A. Hua, Ning Jiang, University of Central  
Florida, USA

10:30 – NOON

APOLLO 1

**PROGRAMMING LANGUAGES - 4**

*Marjan Mernik, University of Maribor, Maribor, SLOVENIA*

**Interprocedural Exception Analysis for Java**

Byeong-Mo Chang, Sookmyung Women's University, Korea  
Jang-Wu Jo, Pusan University of Foreign Studies, Korea  
Kwangkeun Yi, Kwang-Moo Choe, Korea Advanced Institute  
of Science and Technology, Korea

**Register Pressure Responsive Software Pipelining**

Glenn Altemose, Cindy Norris, Appalachian State University,  
USA

**A Dynamic Locality Optimization Algorithm for Linear Algebra Codes**

Mahmut Kandemir, Pennsylvania State University, USA

**Exploiting Metrics to Facilitate Grammar Transformation into LALR Format**

James F. Power, National University of Ireland, Ireland  
Brian A. Malloy, Clemson University, USA

10:30 – NOON

APOLLO 2

**EVOLUTIONARY COMPUTATION AND OPTIMIZATION - 1**

*Kay C. Wiese, Technical University of British Columbia,  
Surrey, B.C., Canada*

**Evolutionary Image Enhancement with User Behaviour Modeling**

Cristian Munteanu, Agostinho Rosa, LaSEEB-ISR-Instituto  
Superior Tecnico, PORTUGAL

**Weight-Biased Edge-Crossover in Evolutionary Algorithms for Two Graph Problems**

Bryant A. Julstrom, St. Cloud State University, USA  
Gunther R. Raidl, Vienna University of Technology, Austria

**A Hybrid Genetic Algorithm for the Point to Multipoint Routing Problem with Single Split Paths**

Pablo Galiasso, Roger L. Wainwright, University of Tulsa,  
USA

10:30 – NOON

APOLLO 3

**DATABASE TECHNOLOGY - 4**

*Sara Comia, Politecnico di Milano, Milano, Italy*

**A Cell-based Index Structure for Similarity Search in High-Dimensional Feature Spaces**

Kwang-Taek Song, Hwa-Jin Nam, Jae-Woo Chang, Chonbuk  
National University, South Korea

**Graph-based GUIs for Querying XML Data: the XML-GL Experience**

S. Comai, Politecnico di Milano, Italy

**A Case for Parameterized Views and Relational Unification**

Hasan M. Jamil, Mississippi State University, USA

**Integration of the Viewpoint Mechanism in Federated Databases**

Fouzia Benchikha, Mahmoud Boufaïda, University Mentouri  
of Constantine, Algeria  
Lionel Seinturier, Pierre et Marie Curie University, France

TUESDAY, NOON – 1:30PM

SOMEWHERE

**LUNCH BREAK (ON YOUR OWN)**

1:30 – 3:00PM

ATHENA

**MOBILE COMPUTING SYSTEMS AND APPLICATIONS - 2**

*M. Ancona, University of Genova, Geneva, ITALY*

**Adaptive Semantic Data Broadcast in a Mobile Environment**

Ken C. K. Lee, Hong Va Leong, Hong Kong Polytechnic  
University, Hong Kong  
Antonio Si, Oracle Corporation, USA

**A Ubiquitous Stable Storage for Mobile Computing Devices**

Legand L. Burge III, Suleiman Baajun, Moses Garuba,  
Howard University, USA

**Managing Security Policies in a Distributed Environment Using eXtensible Markup Language (XML)**

Nathan N. Vuong, Geoffrey S. Smith, Florida International  
University, USA  
Yi Deng, University of Texas at Dallas, USA

1:30 – 3:00PM

APOLLO 1

**SOFTWARE ENGINEERING AND MANAGEMENT - 2**

*Yih-Feng Hwang, WorldCom, Chantilly, VA, USA*

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**Towards a Universal Service-Computing Platform  
Via Virtual Service Machine**

Jun-jang Jeng, IBM T. J. Watson Research Center, USA

**Building a Layered Framework for the Table  
Abstraction**

H. Conrad Cunningham, University of Mississippi, USA  
Jingyi Wang, Acxiom Corp, USA

**A Software Reuse Reference Model Approach in  
Developing an Automated Educational System for  
Patients Health Care Management**

Anil Khatri, David C. Rine, George Mason University, USA

**Algorithms to Detecting-Faults in Chained Inference  
Faults in Information Distribution Systems**

Yih-Feng Hwang, WorldCom, USA  
David Rine, George Mason University, USA

**1:30 – 3:00PM**

**APOLLO 2**

**EVOLUTIONARY COMPUTATION AND  
OPTIMIZATION - 2**

*Bryant Julstrom, St. Cloud State University, St. Cloud,  
Minnesota, USA*

**Linkage-Learning Genetic Algorithm Application to  
the Protein Structure Prediction Problem**

Karl R. Deerman, Gary B. Lamont, Air Force Institute of  
Technology, USA  
Ruth Pachter, Air Force Research Laboratory, USA

**Evolving Robot Behavior via Interactive  
Evolutionary Computation: From Real-World to  
Simulation**

Gerry Dozier, Auburn University, USA

**Evolving Effective CA/CSTP BIST Architectures for  
Sequential Circuits**

F. Corno, M. Sonza Reorda, G. Squillero, Politecnico di  
Torino, ITALY

**1:30 – 3:00PM**

**APOLLO 3**

**DATABASE TECHNOLOGY - 5**

*Reda Alhadj, American University of Sharjah, Sharjah, UAE*

**Regression Testing of Database Applications**

Ramzi A. Haraty, Nash'at Mansour, Bassel Daou, Lebanese  
American University, Lebanon

**A Dual Copy Method for Transaction Separation  
with Multiversion Control for Read-Only  
Transactions**

Baojing Lu, North Dakota State University, USA  
Qinghua Zou, University of California, USA  
William Perrizo, North Dakota State University, USA

**Conceptual Multidimensional Data Model Based on  
Object Oriented MetaCube**

Nguyen Thanh Binh, A Min Tjoa, Vienna University of  
Technology, Austria

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**TUESDAY, 3:00 – 3:30PM**

**BREAK**

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**3:30 – 5:00PM**

**ATHENA**

**MOBILE COMPUTING SYSTEMS AND  
APPLICATIONS - 3**

*Jie Li, University of Tsukuba, Tsukuba, JAPAN*

**TOS: Kernel Support for Distributed Systems  
Management**

Kåre J. Lauvset, Dag Johansen, University of Tromsø,  
Norway  
Keith Marzullo, University of California San Diego, USA

**Improving Performance of MAC Layer by Using  
Congestion Control/Avoidance Methods in Wireless  
Network**

Song Ci, Hamid Sharif, University of Nebraska-Lincoln,  
USA  
Guevara Noubir, CSEM, Switzerland

**Context and Location Aware Textual Data Input**

M. Ancona, S. Locati, A. Romagnoli, DISI – University of  
Genoa, Italy

**A Debugging Calculus for Mobile Ambients**

GianLuigi Ferrari and Emilio Tuosto, Università di Pisa, Italy

**3:30 – 5:00PM**

**APOLLO 1**

**COMPUTER USES IN EDUCATION**

*Ng S.T. Chong, United Nations University, Japan*

**Distributed Virtual Environment Realizing  
Collaborative Environmental Education**

Masaya Okada, Hiroyuki Tarumi, Tetsuhiko Yoshimura,  
Kyoto University, Japan

**Component-Centric Approach in a Web-Based  
Home Schooling Application**

Lin Chen, Youwen Ouyang, California State University-San  
Marcos, USA

**A Web-Based Synchronized Multimedia System for  
Distance Education**

Marco Rocchetti, Paola Salomoni, Università degli Studi di  
Bologna, Italy

**Creating and Sharing Web Notes via a Standard  
Browser.**

Ng S.T. Chong, United Nations University, Japan  
Masao Sakauchi, University of Tokyo, Japan

**3:30 – 5:00PM**

**APOLLO 2**

**EVOLUTIONARY COMPUTATION AND  
OPTIMIZATION - 3**

Roger L. Wainwright, University of Tulsa, Tulsa, OK, USA

**Diversity-based Selection Pooling Scheme in Evolution Strategies**

Tao-Yuan Huang, Yung-Yaw Chen, National Taiwan University, Taiwan

**Encoding Rectilinear Steiner Trees as Lists of Edges**

Bryant A. Julstrom, St. Cloud State University, USA

**Using Assortative Mating in Genetic Algorithms for Vector Quantization Problems**

Carlos Fernandes, Laseeb-ISR, Portugal  
Rui Tavares, Universidade Evora, Portugal  
Cristian Munteanu, Agostinho Rosa, Laseeb-ISR, Portugal

3:30 – 5:00PM

APOLLO 3

**COMPUTATIONAL SCIENCES**

Jonathan Dowell, Los Alamos National Labs, Los Alamos, NM, USA

**Large-Scale Flow Field Visualization for Aneurysm Treatment**

Damon Liu, Mark Burgin, Walter Karplus, Daniel Valentino, University of California, USA

**Self-Consistent Simulation Studying Environment For the Design of High-Speed Optical Communication Lines.**

Kazuhiro Shimoura, Technical Research Center of the Kansai Electric Power Co, Japan

**Connectivity of Random Graphs and Mobile Networks: Validation of Monte Carlo Simulation Results**

L.Jonathan Dowell, Los Alamos National Laboratory, USA  
Michael Lee Bruno, United States Naval Academy, USA

TUESDAY, 5:30 – 6:30PM

APOLLO 1

**SAC 2002 ORGANIZATION MEETING**

TUESDAY, 7:00PM

PARTHENON 2

**BANQUET**

**WED. MARCH 14, 2001**

7:30AM – NOON

FOYER

**REGISTRATION**

8:30 – 10:00PM

APOLLO 1

**NEURO-FUZZY APPLICATIONS - 1**

Ernesto Damiani, Università di Milano, Crema, Italy

**Application of Computational Intelligence Techniques in Active Networks**

Athanasios V. Vasilakos FORTH, Greece  
Kostas G. Anagnostakis, University of Pennsylvania, USA  
Witold Pedrycz, University of Alberta, Canada

**An Adaptive Fuzzy Threshold Scheme For High Performance Shared-Memory Switches**

Giuseppe Ascia, Vincenzo Catania, Daniela Panno, Università di Catania, Italy

**The Sustainable-Cell-Rate Usage Parameter Control with Adjustable Window for High-Speed Multimedia Communications**

San-Yhi Chen, Li-Fong Lin, Chih-Sheng Chang, Chung-Ju Chang, National Chiao Tung University, Taiwan

**Application of Fuzzy Indexing and Retrieval in Case Based Reasoning for Design**

Stefania Bandini, Sara Manzoni, Università di Milano-Bicocca, Italy

8:30 – 10:00PM

APOLLO 2

**COORDINATION MODELS, LANGUAGES AND APPLICATIONS - 1**

Andrea Omicini, Università di Bologna, Italy

**Debugging Agent Interactions: a Case Study**

David Flater, National Institute of Standards and Technology, USA

**Formalization of a Commitment-Based Agent Interaction**

Jie Xing, Munindar P. Singh, North Carolina State University, USA

**SIFTER-II: A Heterogeneous Agent Society for Information Filtering**

Rajeev R. Raje, Mingyong Qiao, Snehasis Mukhopadhyay, Indiana University, Purdue, USA

8:30 – 10:00PM

APOLLO 3

**PARALLEL AND DISTRIBUTED COMPUTING - 1**

Zhizhang Shen, Plymouth State College, Plymouth, NH, USA

**A Routing Algorithm for the Pyramid Structures**

Zhizhang Shen, Plymouth State College, USA

**Unicast-Based Broadcast: An Analysis for the Hypercube with Adaptive Routing**

A. Shahrabi, M. Ould-Kaoua, L. M. Mackenzie, University of Glasgow, UK

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**Analysis of Adaptive Wormhole-Routed Torus Networks with IPP Input Traffic**

Geyong Min, John Ferguson, University of Strathclyde, UK  
Mohamed Ould-Khaoua, University of Glasgow, UK

**An Efficient Algorithm for Causal Messages Ordering**

Aomar Maddi, IRISA, France

Fodil Dahamni, Institute National d'informatique, Algerie

**8:30 – 10:00PM**

**APOLLO 4**

**DIGITAL AUDIO AND VIDEO**

Angelo Yfantis, University of Nevada, Las Vegas, NV, USA

**A Simple Partitioning Approach to Fractal Image Compression**

Ghim-Hwee Ong, Chorng-Meng Chew, Yi Cao, National University of Singapore, Singapore

**Goal-directed Object-oriented Programming in Unicon**

Clinton Jeffery, University of Nevada Las Vegas, USA

**On Motion and Noise Detection In Digital Video**

A. Angelopoulos, E. A. Yfnatis, A. Popovich, T. Lazarakis, University of Nevada Las Vegas, USA

**An Algorithm for Key-Frame Determination in Digital Video**

Evangelos A. Yfantis, University of Nevada Las Vegas, USA

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**WED, 10:00 – 10:30AM**

**BREAK**

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**10:30 – NOON**

**APOLLO 1**

**NEURO-FUZZY APPLICATIONS - 2**

*Athanasios Vasilakos, Foundation for Research and Technology-Hellas, Crete, Greece*

**A Function-Based Join for the Manipulation of Possibilistic Relations**

Patrick Bosc, IRISA/ENSSAT, France

Ludovic Lietard, IRISA/IUT, France

Olivier Pivert, IRISA/ENSSAT, France

**Genetic-Based Fuzzy Clustering for Automatic Web Document Categorization**

Vincenzo Loia, Paolo Luongo, Università di Salerno, Italy

**Genetic-Based Fuzzy Clustering for Automatic Web Document Categorization**

Vincenzo Loia, Paolo Luongo, Università di Salerno, Italy

**A Proposal for Modeling Real Options Through Fuzzy Expert System**

G. Mastroleo, G. Facchinetti, C.A. Magni, University of Modena, Italy

**A Fuzzy Neural Network Approach To Model Component Behavior For Virtual Prototyping Of Hydraulic Systems**

Wei Xiang, Sai Cheong Fok Fook Fah Yap, Nanyang Technological University, Singapore

**10:30 – NOON**

**APOLLO 2**

**COORDINATION MODELS, LANGUAGES AND APPLICATIONS - 2**

*David Flater, National Institutes of Standards and Technology, MD, USA*

**Coordination Control with BCOOPL**

Hans de Bruin, Vrije Universiteit, The Netherlands

**Dynamic Coordination Architecture through the use of Reflection**

Carlos E. Cuesta, Pablo de la Fuente, Manuel Barrio-Solórzano, Universidad de Valladolid, Spain

**A Framework for Building Non-Functional Software Architectures**

Nelson S. Rosa, Universidade Federal de Pernambuco, Brazil

George R.R. Justo, University of Westminster, UK

Paulo R.F. Cunha, Universidade Federal de Pernambuco, Brazil

**DIP: A Pattern-based Approach for Task and Data Parallelism Integration**

Manuel Díaz, Bartolomé Rubio, Enrique Soler, José M. Troya, University of Málaga, Spain

**10:30 – NOON**

**APOLLO 3**

**PARALLEL AND DISTRIBUTED COMPUTING - 2**

*Li-jie Jin, HP Laboratories, Palo Alto, CA, USA*

**Scheduling and Caching Strategies for Broadcasting Correlated Data**

Etsuko Yajima, FM Osaka Co, Japan

Takahiro Hara, Masahiko Tsukamoto, Shojiro Nishio, Osaka University, Japan

**Efficient Schemes to Scale the Interconnection Network Bandwidth in a Ring-Based Multiprocessor System**

Byoung Soon Jang, Sung Woo Chung, Chu Shik Jhon, Seoul National University, Korea

Seong Tae Jhang, The University of Suwon, Korea

**An Agent Architecture for Vehicle Routing Problems**

Sam R. Thangiah, Olena Shmygelska, William Mennell, Slippery Rock University, USA

**Verification Caching: Towards Efficient and Secure Mobile Code Execution Environments**

Nael Abu-Ghazaleh

10:30 – NOON

APOLLO 4

**MULTIMEDIA AND VISUALIZATION**

*Chaman Sabharwal, University of Missouri-Rolla, MO, USA*

**Considering Video Characteristics for Improved Cache Performance in VOD Systems**

B. Sonah, University of Mauritius, Mauritius  
M. R. Ito, University of British Columbia, Canada

**Indexing Image Databases Using Wavelet and Discrete Fourier Transform**

Chaman Sabharwal, S. R. Subramanya, University of Missouri - Rolla, USA

**Extending Hypertext Streaming Protocol to Realize Effective Web Page Transmission via a Caching Proxy**

Tadashi Nakano, Kaname Harumoto, Shinji Shimojo, Shojiro Nishio, Osaka University, Japan

**ADAPT - A Low Cost Video Conference Model for Personal Computers Running on IP Networks**

Fabio A. Zanin, Lisandro Z. Granville, Maria J. Almeida, UFRGS, Brazil

WED, NOON – 1:30PM

GARDENS ROOM

**TRACK CHAIRS LUNCHEON**

1:30 – 3:00PM

APOLLO 1

**COORDINATION MODELS, LANGUAGES AND APPLICATIONS - 3**

*Ronaldo Menezes, Florida Institute of Technology, FL, USA*

**Synchronous Coordination in the  $\mu$ Log Coordination Model**

Koen De Bosschere, Ghent University, Belgium  
Jean-Marie Jacquet, FUNDP, Belgium

**Coordinating Interaction Patterns**

Andrea Bracciali, Antonio Brogi, Franco Turini, Università di Pisa, Italy

**On Observation as a Coordination Paradigm: An Ontology and a Formal Framework**

Mirko Viroli, Gianluca Moro, Andrea Omicini, Università di Bologna, Italy

1:30 – 3:00PM

APOLLO 2

**PARALLEL AND DISTRIBUTED COMPUTING - 3**

*Daniel Pressel, U.S. Army Research Laboratory, Aberdeen Proving Ground, Maryland, USA*

**Load Balancing in Distributed Workflow Management System**

Li-jie Jin, Fabio Casati, Mehmet Sayal, Ming-Chien Shan, HP Laboratories, USA

**A New Distributed Mutual Exclusion Algorithm for Two Groups**

Ahmed Housni, Michel Trehel, Universite de Franche Comte, France

**Processor Reordering Algorithms Toward Efficient GEN\_BLOCK Redistribution**

Saeri Lee, Hyun-Gyoo Yook, Mi-Soon Koo, Myong-Soon Park, Korea University, Korea

**Performance Evaluation of the LH\*lh Scalable, Distributed Data Structure for a Cluster of Workstations**

Vinay Gupta, Mohit Modi, Indian Institute of Technology, India

Andy D. Pimentel, University of Amsterdam, Netherlands

WED, 3:00 – 3:30AM

BREAK

3:30 – 5:00PM

APOLLO 1

**COORDINATION MODELS, LANGUAGES AND APPLICATIONS - 4**

*Antonio Brogi, Universita di Pisa, Italy*

**Adapting Publish/Subscribe Middleware to Achieve Gnutella-like Functionality**

Dennis Heimburger, University of Colorado, USA

**Coordination Aspects in a Spatial Group Decision Support Collaborative System**

Sergio P J Medeiros, Jano M de Souza, COPPE/UFRJ, Brazil  
Julia Celia M Strauch, EMBRAPA/SOLOS, Brazil  
Gustavo R B Pinto, COPPE/UFRJ, Brazil

**Experience with Memory Management in Open Linda Systems**

Ronaldo Menezes, Florida Institute of Technology, USA

3:30 – 5:00PM

APOLLO 2

**PARALLEL AND DISTRIBUTED COMPUTING - 4**

*Claudia Leopold, Friedrich-Schiller-Universitaet Jena, Jena, Germany*

**Finding Hamiltonian Paths in Tournaments on Clusters - A Provably Communication-Efficient Approach**

Chun-Hsi Huang, Xin He, State University of New York at Buffalo, USA

**Fundamental Limitations on the Use of Prefetching and Stream Buffers for Scientific Applications**

Daniel M. Pressel, U.S. Army Research Laboratory, USA

**Exploiting Non-Uniform Reuse for Cache Optimization: A Case Study**

Claudia Leopold, Friedrich-Schiller-Universitat Jena, Germany

See You Next Year in Spain!