

PerCom 2004 Advance Program

Monday March 15, 2004

- 8:00-6:00 Registration
8:45-9:00 Opening Remarks
9:00- 10:00 Keynote Lecture: *Internet Suspend/Resume and Smart Rocks*,
M. Satyanarayanan, CMU and Intel Research Lab, Pittsburgh

10:00-10:30 Coffee break

10:30-12:00 Parallel Tracks

Session 1A: Applications of Pervasive Computing Systems

- *Augmenting Film and Video Footage with Sensor Data*, Norman Makoto Su, Heemin Park, Eric Bostrom, Jeff Burke, Mani B. Srivastava, and Deborah Estrin, University of California, Los Angeles, USA
- *Learning to Detect User Activity and Availability from a Variety of Sensor Data*, Martin Muehlenbrock, Oliver Brdiczka, and Dave Snowden, Xerox Research Center Europe, France
- *Drishiti: An Integrated Indoor/Outdoor Blind Navigation System and Service*, Lisa Ran, Sumi Helal, and Steve Moore, University of Florida, Gainesville, USA

Session 1B: Sensing and Monitoring in Smart Spaces

- *An Augmented Virtual Reality Interface for Assistive Monitoring of Smart Spaces* Shichao Ou, Deepak R. Karuppiah, Andrew H. Fagg, Edward Riseman, and Roderic Grupen, University of Massachusetts, Amherst, USA
- *Quick Realization of Function for Detecting Human Activity Events by Ultrasonic 3D Tag and Stereo Vision* Yoshifumi Nishida, Koji Kitamura, Toshio Hori, Akifumi Nishitani, Takeo Kanade, and Hiroshi Mizoguchi, Tokyo Science University, Japan
- *Dynamic World Models from Ray-Tracing* Robert Harle and Andy Hopper, University of Cambridge, UK

12:00-1:30 Lunch

1:30-3:00 Parallel Tracks

Session 2A: Programming and Software Engineering of Pervasive Systems

- *PCOM – A Component System for Pervasive Computing*, C. Becker, M. Handte, G. Schiele, K. Roethermel, University of Stuttgart, Germany
- *A Software Engineering Framework for Context-Aware Pervasive Computing*, Karen Henriksen and Jadwiga Indulska, University of Queensland, Australia
- *Pervasive Enablement of Business Processes*, Dipanjan Chakraborty and Hui Lei, University of Maryland Baltimore County and IBM T.J. Watson Research Center, USA

Session 2B: Location Sensing

- *A 3-D Indoor Positioning Method using a Single Compact Base Station*, Esko Dijk, Kees van Berkel, Ronald Aarts, and Evert van Loenen, Eindhoven University of Technology and Phillips Research Laboratories, The Netherlands
- *Employing User Feedback for Fast, Accurate, Low-Maintenance Geolocationing*, Ezekiel S. Bhasker, Steven W. Brown, William G. Griswold, University of California, San Diego, USA
- *Cooperative Location-Sensing for Wireless Networks*, Charalampos Fretzagias and Maria Papadopouli, University of North Carolina at Chapel Hill, USA

3:00-3:30 Coffee Break

3:30-5:30 Parallel Tracks

Session 3A: Wireless and Ad Hoc Networks

- *Energy-Aware Media Transcoding in Wireless Systems*,
Christian Poellabauer and Karsten Schwan,
Georgia Institute of Technology, Atlanta, USA
- *Wi-Fi in Ad Hoc Mode: A Measurement Study*,
Giuseppe Anastasi, Eleonora Borgia, Marco Conti, and Enrico Gregori,
University of Pisa and Istituto IIT CNR, Italy
- *On Web Performance during Vertical Handovers: Experiences from GPRS-WLAN Integration*,
Rajiv Chakravorty, Pablo Vidales, Ian Pratt, and Jon Crowcroft, University of Cambridge, UK
- *Analyzing Connectivity-Based Multi-Hop Ad-Hoc Positioning*,
Regina Bischoff and Roger Wattenhofer, ETH Zurich, Switzerland

Session 3B: Systems Theory and Concepts

- *Distributed Snapshots for Mobile Computing Systems*,
Adnan Agbaria and William H. Sanders, University of Illinois at Urbana-Champaign, USA
- *Mobile to Base Task Migration in Wireless Computing*,
Savvas Gitzenis and Nicholas Bambos, Stanford University, USA
- *Efficient Mobile Access to Internet Data via a Wireless Peer-to-Peer Network*,
Seung-Seok Kang and Matt Mutka, Michigan State University, USA

Tuesday March 16, 2004

8:30-12:00 Registration

9:00- 10:00 Keynote Lecture: *Labscape -- Pervasive Computing in a Microbiology Lab*,
Larry Arnstein, Affiliate University of Washington

10:00-10:30 Coffee break

10:30-12:00 Parallel Tracks

Session 4A: Service Mediators

- *A Mobility Gateway for Small-Device Networks*,
Robert C. Chalmers and Kevin C. Almeroth, University of California at Santa Barbara, USA
- *A User-Guided Cognitive Agent for Network Service Selection in Pervasive Computing Environments*,
George Lee, Peyman Faratin, Steven Bauer, and John Wroclawski,
Massachusetts Institute of Technology, USA
- *Promoting Cooperation Among Strangers to Access Internet Services from an Ad Hoc Network*,
Danyu Zhu and Matt Mutka, Michigan State University, USA

Session 4B: Pervasive System Architectures

- *Patch Panel: Enabling Control-Flow Interoperability in Ubicomp Environments*,
Rafael Ballagas, Andy Szybalski, and Armando Fox, Stanford University, USA
- *MediaBroker: An Architecture for Pervasive Computing*,
Martin Modahl, Ilya Bagrak, Matthew Wolenetz, Phillip Hutto, and Umakishore Ramachandran,
Georgia Institute of Technology, USA
- *Programming Pervasive and Mobile Computing Applications with the TOTA Middleware*,
Marco Mamei and Franco Zambonelli, University of Modena, Italy

12:00-1:30 Lunch

1:30-3:00 Parallel Tracks

Session 5A Context-Aware Computing

- *Semantic Web in the Context Broker Architecture*,
Harry Chen, Tim Finin, and Anupam Joshi, University of Maryland Baltimore County, USA
- *Supporting Persistent Social Groups in Ubiquitous Computing Environments Using Context-Aware Ephemeral Group Service*,
Bin Wang, John Bodily, and Sandeep K. S. Gupta, Arizona State University, USA
- *From Home to World - Supporting Context-Aware Applications through World Models*,
Othmar Lehmann, Martin Bauer, Christian Becker, and Daniela Nicklas,
Georgia Institute of Technology, USA, and University of Stuttgart, Germany

Session 5B: Security in Pervasive Systems

- *Denial-of-Service Attacks on Battery-powered Mobile Computers*,
Thomas Martin, Michael Hsiao, Dong Ha, and Jayan Krishnaswami, Virginia Tech, USA
- *Personal Servers as Digital Keys*,
Allan Beaufour and Philippe Bonnet, University of Copenhagen, Denmark
- *PrudentExposure: A Private and User-centric Service Discovery Protocol*,
Feng Zhu, Matt Mutka, and Lionel Ni, Michigan State University, USA, and
Hong Kong University of Science and Technology, Hong Kong, China

3:00-3:30 Coffee Break

3:30-5:00

Session 6: Panel Discussion

Panel Topic: *Pervasive Infrastructure Deployment: Practical or Pipedream?*

Moderator: Archan Misra, IBM T.J. Watson Research Center

Banquet Lecture: *IBM's Pervasive Computing Programs.*

Stefan Hild, Senior Manager of IBM's Pervasive Computing Solutions

Wednesday March 17, 2004

9:00- 10:00 Keynote Lecture: *Intel's Mobile Centrino Architecture*
Jim Kardach, Principal Engineer, Intel Mobile Products Group (MPG)

10:00-10:30 Coffee break

10:30-12:30

Session 6: Concise Contributions

- *Personal Home Server: Enabling Personalized and Seamless Ubiquitous Computing Environments*,
Tatsuo Nakajima and Ichiro Satoh, Waseda University and National Institute of Informatics, Japan
- *Towards Socially Aware Pervasive Computing: A Turntaking Approach*,
Esko Kurvinen and Antti Oulasvirta, Helsinki Institute for Information Technology, Finland
- *One-Time Authorization for off-line Interactions*,
Laurent Bussard and Refik Molva, Institute Eurecom, Sophia Antipolis, France
- *Dynamic Federation of Partitioned Applications in Ubiquitous Computing Environments*,
Ichiro Satoh, National Institute of Informatics, Japan
- *A Framework for Developing Mobile, Context-aware Applications*,
Gregory Biegel and Vinny Cahill, Trinity College, Dublin, Ireland
- *Camera-typing Interface for Ubiquitous Information Services*,
Shuji Senda, Kyosuke Nishiyama, Toshiyuki Asahi, and Keiji Yamada, NEC Corporation, Japan