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**PERVASIVE**

Munich, Germany  
May 8-13

**2005**

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**Conference Program**

# Sunday, May 8th 2005 – Doctoral Colloquium

Institute for Informatics, Oettingenstr. 67 - 80538 München

9.00-9.30  
Room 1.14

## Welcome

9.30-11:00  
Room 1.14

## DC Session 1

Semi-automatic generation of device adapted user interfaces

*Stina Nylander, Swedish Institute of Computer Science, Kista, Sweden*

*Expert discussant: Anind Dey*

DEMAC: A Distributed Environment for Mobility Aware Computing

*Christian P. Kunze, University of Hamburg, Department of Informatics, Germany*

*Expert discussant: Claudia Linnhoff-Popien*

11.00-11.30

*Break*

11.30-13.00  
Room 1.14

## DC Session 2

Physical Browsing

*Pasi Välikinen, VTT Information Technology, Tampere, Finland*

*Expert discussant: Jakob Bardram*

Design for Interaction in Instrumented Environments

*Lucia Terrenghi, Ludwig Maximilian University of Munich, Media Informatics, Germany*

*Expert discussant: Mike Hazas*

13.00-14.30

*Lunch*

14.30-16.00  
Room 1.14

### DC Session 3

A Seamless Mobile Community Support System  
*Bernhard Klein, University of Vienna, Austria*  
*Expert discussant: Tom Pfeifer*

Thomas Buchholz: Scalable Context-Aware Services  
*Ludwig Maximilian University of Munich, Mobile and Distributed Systems Group, Germany*  
*Expert discussant: Gabriele Kotsis*

16.00-16.30

*Coffee*

16.30-18.00

### DC Session 4a (Room 1.14)

Interacting with Federated Devices  
*Elmar Braun, Darmstadt University of Technology, Germany*  
*Expert discussant: Tom Pfeifer*

Graphics Architecture for Multimedia Non-Desktop Devices: a study on digital television receivers  
*Pablo Cesar, Helsinki University of Technology, Finland*  
*Expert discussant: Andreas Butz*

### DC Session 4b (Room 1.05)

Towards Usable Context-Aware Mobile Handheld Applications  
*Jonna Häkkinä, University of Oulu, Finland*  
*Expert discussant: Antonio Krüger*

A Multi-Agent System for Dynamic Service Composition in Ambient Intelligence Environments  
*Mathieu Vallée, France Telecom R&D, TECH/ONE, Grenoble, France*  
*Expert discussant: Antonio Krüger*

19.00-22.00

### Doctoral Colloquium Dinner

The dinner will be held at a theme restaurant designed after **The Threepenny Opera** (Dreigroschenoper) of Bertolt Brecht ([www.dreigroschenkeller.com](http://www.dreigroschenkeller.com)).

# Monday, May 9th 2005 – PERVASIVE 2005 Conference

Maritim Hotel, Goethestr. 7 - 80336 München

Registration starting at 7:30 am

9.00-9.30

## Introduction

*Albrecht Schmidt (University of Munich, Germany), Hans Gellersen (Lancaster University, UK), Roy Want (Intel Research, USA)*

9.30-10.30

## Keynote

Intelligent Artifacts: the Interaction of Brain, Body, and Environment  
*Rolf Pfeifer (University of Zurich, Switzerland)*

10.30-11.00

*Break*

11.00-12.30

## Session 1: Location Techniques *(Session chair: John Krumm)*

Audio Location: Accurate Low-Cost Location Sensing  
*James Scott, Boris Dragovic (Intel Research Cambridge, United Kingdom)*

Using Sound Source Localization in a Home Environment  
*Xuehai Bian, Gregory Abowd, James Rehg (Georgia Institute of Technology, USA)*

Tracking Locations of Moving Hand-held Displays Using Projected Light  
*Jay Summet (Georgia Institute of Technology, USA), Rahul Sukthankar (Intel Research Pittsburgh, USA)*

12.30-14.00

*Lunch*

14.00-16.00

## **Session 2: Activity and Context** *(Session chair: Stephen Intille)*

**Bathroom Activity Monitoring Based on Sound**

*Jianfeng Chen, Alvin Harvey Kam, Jianmin Zhang, Ning Liu, Louis Shue (Institute for Infocomm Research, Singapore)*

**Simultaneous Tracking and Activity Recognition (STAR) Using Many Anonymous Binary Sensors**

*Daniel Wilson (Carnegie Mellon University, USA)*

**Enhancing Semantic Spaces with Event-driven Context Interpretation**

*Joo Geok Tan, Daqing Zhang, Xiaohang Wang, Heng Seng Cheng (Institute for Infocomm Research & School of Computing/National University of Singapore(NUS), Singapore)*

**The Java Context Awareness Framework (JCAF) -- A Service Infrastructure and Programming Framework for Context-Aware Applications**

*Jakob Bardram (University of Aarhus, Denmark)*

16.00-16.30

*Coffee*

16.30-17.30

## **Session 3: Posters, Demos and Videos**

*(Session chairs: Alois Ferscha, Thomas Strang, Andreas Butz)*

**1-Minute Madness (Overview presentation of posters and demos)**

Videos

17.30-19.30

## **Poster and Demo Reception**

14 Posters and 12 demos will be exhibited in the conference hotel.

During the reception food and drinks will be available.

## **RUNES Industry Forum**

The Industry Forum will present findings of the activity conducted within the RUNES project.

It will be open to conference participants who are interested.

## Tuesday, May 10th 2005 - – PERVASIVE 2005 Conference

Maritim Hotel, Goethestr. 7 - 80336 München

9.00-10.30

### **Session 4: Location and Privacy** (Session chair: Nigel Davies)

Place Lab: Device Positioning Using Radio Beacons in the Wild

*Anthony LaMarca, Yatin Chawathe, Sunny Consolvo, Jeffrey Hightower, Ian Smith, James Scott, Timothy Sohn, James Howard, Jeff Hughes, Fred Potter, Jason Tabert, Pauline Powledge, Gaetano Borriello and Bill Schilit (Intel Research Seattle, USA and Intel Research Cambridge, United Kingdom)*

Social Disclosure Of Place: From Location Technology to Communication Practice

*Ian Smith, Sunny Consolvo, Anthony LaMarca, Jeffrey Hightower, James Scott, Timothy Sohn, Jeff Hughes, Giovanni Iachello and Gregory D. Abowd (Intel Research Seattle & University of Washington & Georgia Institute of Technology, USA and Intel Research Cambridge, United Kingdom)*

A formal model of obfuscation and negotiation for location privacy

*Matt Duckham, Lars Kulik (University of Melbourne, Australia)*

10.30-11.00

*Coffee*

11.00-12.30

### **Session 5: Handheld Devices** (Session chair: Chris Schmandt)

A Conceptual Framework for Camera Phone based Interaction Techniques

*Michael Rohs, Philipp Zweifel (ETH Zurich, Switzerland)*

u-Photo: Interacting with Pervasive Services using Digital Still Images

*Genta Suzuki, Shun Aoki, Takeshi Iwamoto, Daisuke Maruyama, Naohiko Kohtake, Kazunori Takashio, Hideyuki Tokuda (Keio University, Japan)*

Towards Massively Multi-User Augmented Reality on Handheld Devices

*Daniel Wagner, Thomas Pintaric, Florian Ledermann, Dieter Schmalstieg (Vienna University of Technology, Austria)*

12.30-14.00

*Lunch*

14.00-15.30

## **Session 6: Sensor systems** *(Session chair: Bernt Schiele)*

Design Methodology for context-aware wearable sensor systems

*Urs Anliker, Holger Junker, Paul Lukowicz, Gerhard Tröster (Wearable Computing Lab ETH Zürich, Switzerland)*

Collaborative Sensing in a Retail Store Using Synchronous Distributed Jam Signalling

*Albert Krohn, Tobias Zimmer, Michael Beigl, Christian Decker (TecO, University of Karlsruhe, Germany)*

Parasitic Mobility for Pervasive Sensor Networks

*Mathew Laibowitz, Joseph Paradiso (MIT Media Laboratory, USA)*

15.30-16.00

*Coffee*

16.00-18.00

## **Session 7: User Interfaces** *(Session chair: Gabriele Kotsis)*

Decision-Theoretic Planning Meets User Requirements: Enhancements and Studies of an Intelligent Shopping Guide

*Thorsten Bohnenberger, Oliver Jacobs (Saarland University, Germany), Anthony Jameson (DFKI, Germany)*

Integrating Intra and Extra Gestures into a Mobile and Multimodal Shopping Assistant

*Rainer Wasinger (DFKI GmbH, Germany), Antonio Krüger (Saarland University, Germany)*

Aware Mirror: A Personalized Display using a Mirror

*Kaori Fujinami, Fahim Kawsar, Tatsuo Nakajima (Waseda University, Japan)*

Embedded Assessment: Overcoming barriers to Early Detection through Pervasive Computing

*Margaret Morris (Intel Corporation, USA), Stephen Intille, Jennifer Beaudin (Massachusetts Institute of Technology, USA)*

18.00-18.15

**Closing**

## Tuesday, May 10th 2005 – Conference Dinner

Augustinerkeller, Arnulfstrasse 52- 80335 München

20.00-23.30

### Dinner at Augustinerkeller

The conference dinner will take place at the Augustinerkeller. The Augustinerkeller is a traditional Bavarian place serving a variety of original food, it is famous for its excellent beer. It is also one of the biggest Biergardens in the Center of Munich.

The Augustinerkeller is in walking distance (about 15 minutes walk) from the conference Hotel. From 19.00 on every 10 minutes a student volunteer will lead the way from the entrance of the conference Hotel to the Augustinerkeller.





## Wednesday, May 11th 2005 – Workshops

9.00-18.00

### **Workshops at the IntercityHotel München** (Bayerstr. 10 - 80335 München)

#### **W1: What makes for good application-led research in ubiquitous computing?**

*George Coulouris (Cambridge University), Tim Kindberg (HP Labs), Bernt Schiele (TU Darmstadt), Albrecht Schmidt (University of Munich), Kasim Rehman (Cambridge University)*

#### **W2: Int. Workshop on Software Techniques for Embedded and Pervasive Systems (STEPS)**

*Mauricio Varea, (University of Southampton), Luis A. Cortes, (Linköping University)*

#### **W5: Software Architectures for Self-Organization: Beyond Ad-Hoc Networking**

*Thomas Kirste (Fraunhofer Institute for Computer Graphics Darmstadt), Alois Ferscha (University of Linz), Anind Dey (Carnegie Mellon University), Khai Truong (Georgia Institute of Technology)*

### **Workshops at the Maritim Hotel** (Goethestr. 7 - 80336 München)

#### **W3: PerGames 2005: Second International Workshop on Pervasive Gaming Applications**

*Carsten Magerkurth (Fraunhofer IPSI), Adrian David Cheok (National University of Singapore), Trond Nilsen (HitLabNZ), Regan Mandryk (Simon Fraser University)*

#### **W4: Auditory Displays for Mobile Context-Aware Systems**

*Richard Etter (Fraunhofer Institute for Applied Information Technology), Marcus Specht (Fraunhofer Institute for Applied Information Technology), Bruce Walker (Georgia Institute of Technology), Gerhard Eckel (Fraunhofer Institute for Media Communication)*

#### **W6: Pervasive Mobile Interaction Devices (PERMID 2005)**

*Enrico Rukzio (University of Munich), Jonna Hakkila (Nokia Corporation), Jani Mäntyjärvi (VTT Technical Research Centre of Finland), Mirjana Spasojevic (Hewlett Packard Labs), Nishkam Ravi (Rutgers University)*

#### **W7: User Experience Design for Pervasive Computing**

*Lucia Terrenghi (LMU Munich University), Irma Lindt (Fraunhofer FIT), Andreas Butz (LMU Munich University), Mike Kuniavsky (Independent Consultant)*

#### **W8 ECHISE 2005 - 1st Int. Workshop on Exploiting Context Histories in Smart Environments**

*Thorsten Prante (Fraunhofer IPSI), Brian Meyers (Microsoft Research, Redmond), Geraldine Fitzpatrick (University of Sussex), Lonnie D. Harvel (Georgia Institute of Technology, Atlanta)*

## Thursday and Friday, May 12th-13th 2005 – LoCA Workshop

Workshop on Location and Context-Awareness held at DLR in Oberpfaffenhofen near Munich, Germany

## Posters of Late Breaking Results

P1: A Trust based Delegation System for Managing Access Control

*Rainer Steffen, Rudi Knorr*

P2: ROC Analysis of Partitioning Method for Activity Recognition Using Two Microphones

*Jamie A. Ward, Paul Lukowic, Gerhard Tröster*

P3: A Noise Resilient Distributed Inference Framework for Body Sensor Networks

*Surapa Thiemjarus, Rachel King, Benny P.L. Lo, Duncan Gilles, Guang-Zhong Yang*

P4: Experiment of Recalling Emotions in Wearable Experience Recordings

*Shogo Shimura, Yasushi Hirano, Shoji Kajita, Kenji Mase*

P5: Describing Sensor Data for Pervasive Prototyping and Development

*Kristof Van Laerhoven, Martin Berchtold, Hans-Werner Gellersen*

P6: Self-Configuring Video-Sensor Networks

*Doros Agathangelou, Benny P.L. Lo, Jeffrey L. Wang, Guang-Zhong Yang*

P7: Context-based Messaging for Ad Hoc Networks

*Daniel Cutting, Derek J. Corbett, Aaron Quigley*

P8: Talking about Place: An Experiment in Exploring How People Describe Places

*Changqing Zhou, Pamela Ludford, Dan Frankowski, Loren Terveen*

P9: Melodious Walkabout: Navigation with Contextualized Personal Audio Contents

*Richard Etter, Marcus Specht*

P10: Anonymization in Proactive Location Based Community Services

*Georg Treu, Axel Küpper, Peter Ruppel*

P11: Back to Paper: A Technique for Browsing Multimedia Information by Pointing on Handwritten Notes

*Ozan Cakmakci, François Bérard*

P12: MAGIC-Surfaces: Magnetically Interfaced Surfaces for Smart Space Applications

*Masateru Minami, Youhei Nishizawa, Kazuki Hirasawa, Hiroyuki Morikawa, Tomonori Aoyama*

P13: Evaluating the Project54 speech user interface

*Laslo Turner, Andrew L. Kun*

## Research Demos

D1: Thermal-ID: A Personal Identification Method Using Body Temperature

*Itaru Kitahara, Masami Ito, Haruo Noma, Kiyoshi Kogure, Norihiro Hagita*

D2: The Ubisense Smart Space Platform

*Pete Steggles, Stephan Gschwind*

D3: Body Sensor Network A Wireless Sensor Platform for Pervasive Healthcare Monitoring

*Benny P.L. Lo, Surapa Thiemjarus, Rachel King, Guang-Zhong Yang*

D4: Ubiquitous Networking Server

*Masugi Inoue, Mikio Hasegawa, Nobuo Ryoki, Hiroyuki Morikawa*

D5: RFID Tag Reader System Emulator to Support Touching, Pointing and Scanning

*Timo Tuomisto, Pasi Välikkynen, Arto Ylisaukko-oja*

D6: Association Management between Everyday Objects and Personal Devices for Passengers in Urban Areas

*Hirobumi Shimizu, Osamu Hanzawa, Ken'ichiro Kanehana, Hiroki Saito, Niwat Thepvilojanapong, Kaoru Sezaki, Yoshito Tobe*

D7: mPATH View: An Interactive Behavior History Viewer for Enhancing Communication

*Masaki Ito, Yuu Furuichi, Jin Nakazawa, Hideyuki Tokuda*

D8: A Stochastic Approach for Creating Dynamic Context-aware Services in Smart Home Environment

*Hua Si, Yoshihiro Kawahara, Hiroyuki Morikawa, Tomonori Aoyama*

D9: From Imaging Networks to Behavior Profiling: Ubiquitous Sensing for Managed Homecare of The Elderly

*Benny P.L. Lo, Jeffrey L. Wang, Guang-Zhong Yang*

D10: PECO: 3D-based Interaction with a UPnP Meeting Room

*Ali A. Nazari Shirehjini*

D11: The Invisible Train - A Collaborative Handheld Augmented Reality Game Installation

*Daniel Wagner, Thomas Pintaric, Dieter Schmalstieg*

## Research Videos

V1: The PlaceLab: A Live-In Laboratory for Pervasive Computing Research

*Stephen S. Intille, Kent Larson, Jennifer S. Beaudin, Emmanuel Munguia Tapia, Pallavi Kaushik, Jason Nawyn, T.J. McLeish*

V2: Creating Pervasive Services with Self-organizable Universal Boards

*Naohiko Kohtake, Takuro Yonezawa, Ryo Ohsawa, Yuki Matsukura, Masayuki Iwai, Kazunori Takashio, Hideyuki Tokuda*

V3: MOSES - the Mobile Service and Exploration System

*Georg Schneider and Martin Greving*

V4: Seamless Access to Mobile Services for the Mobile User

*Daniele Sacchetti, Angel Talamona, Christophe Cerisara, Rafik Chibout, Slim Ben Atallah, Wolfgang Van Raemdonck, Nikolaos Georgantas and Valérie Issarny*

V5: Tracking Locations of Moving Hand-held Displays Using Projected Light

*Jay Summet, Rahul Sukthankar*

V6: Towards Massively Multi-User Augmented Reality on Handheld Devices

*Daniel Wagner, Thomas Pintaric, Florian Ledermann, Dieter Schmalstieg*

## PERVASIVE 2005 Sponsors

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Conference Location  
 Workshops 3, 4, 6, 7, 8  
**Maritim Hotel**  
 Goethestr. 7  
 80336 Munich

Workshops 1, 2, 5  
 (Wednesday only)  
**Intercity Hotel**  
 Bayerstr. 10  
 80335 Munich

Social Event  
 (Tuesday Night)  
**Augustinerkeller**  
 Arnulfstr. 52  
 80335 Munich

**Conference Hotline (May 8 – 11)**  
 +49 176 2124 8696