



# MUM2010

**9<sup>th</sup> International Conference on Mobile and Ubiquitous Multimedia**  
**In-cooperation with ACM SIGMM**  
**December 1-3, 2010, Limassol, Cyprus**  
<http://www.mum2010.org>

## Technical Program

Start	Wednesday Dec 01, 2010	Thursday Dec 02, 2010	Friday Dec 03, 2010
08:00	Registration	Registration	Registration
08:30			
09:00	Welcome & Intro		<a href="#">Paper Session VII:</a> Mobile Media and Mobile Web
09:15			
09:30	<a href="#">Paper Session I:</a> User Experience	<a href="#">Tutorial</a> by Prof. Frank Fitzek	Coffee Break
10:00			
10:30			
10:45	Coffee Break		<a href="#">Paper Session VIII:</a> Mobile Applications and Interaction Techniques
11:00			
11:15			
11:30		Coffee Break	
12:00	<a href="#">Paper Session II:</a> Awareness and Assessment	<a href="#">Demo Reception II</a>	Closing Session starts at 12.10
12:30		<a href="#">Paper Session IV:</a> Communicating and Social Networking	
13:00			
13:15			
13:30	Lunch ( <i>Dionyssos Restaurant</i> )	Lunch ( <i>Dionyssos Restaurant</i> )	
14:00			
14:30			
14:45		<a href="#">Paper Session V:</a> Mobile Learning and Edutainment	
15:00	<a href="#">Paper Session III:</a> Sharing and Discovering		
15:30			
16:00		Coffee Break	
16:30	Coffee Break starts at 16.35	<a href="#">Demo Reception III</a>	
17:00	<a href="#">Keynote I</a> by Prof. Frank Fitzek	<a href="#">Paper Session VI:</a> Location and Context	
17:30			
18:00			
18:30		Departure to CUT premises	
19:00	Welcome Reception ( <i>Trattoria Hall</i> )	<a href="#">Keynote II</a> by Prof. Jon Crowcroft	
19:30			
20:00			
20:30 -		Social Event / Dinner	

NOTE: long papers: 30 minute slots (20 min. presentation + 10 min. questions)  
short papers: 20 minute slots (15 min. presentation + 5 min. questions)

**Keynote I: (60 min)**

Session Chair: Enrico Rukzio

**“Network Coding and User Cooperation on Mobile Phones”**

**Prof. Frank Fitzek**, University of Aalborg, Denmark

*Abstract:*

This keynote addresses the potential of network coding in mobile communication systems. Network coding will change the communication world as it changes the way we design communication protocols. The talk will also highlight a special case of user cooperation and the combination with network coding. The talk will highlight the developments of network coding on mobile platforms (Symbian/iPhone/Android). Small demonstrations will show the feasibility of network coding even on smallest mobile devices.

**Keynote II: (60 min)**

Session Chair: Lambros Lambrinos

**“ErdOS: A Social Network Operating System for Mobile Resource Pooling”**

**Prof. Jon Crowcroft**, University of Cambridge, United Kingdom

*Abstract:*

The resource pooling principle is re-emerging as a way to use statistical multiplexing properties of networks with multiple redundant paths more efficiently than in the past. In this work, we are applying the same principle to mobile handheld systems such as smart phones. The goal of the system we are building, called ERdos, is to pool all resources such as sensors (cameras, microphones, accelerometers), storage (memory, disk, flash) and networks (Bluetooth, wifi, 2.5G/3G/4, zigbee). Initially our motivation was energy reduction. By using the already-enabled GPS on a nearby phone via a low cost wireless link (e.g. Bluetooth), rather than turning on our own GPS, we can reduce the battery load significantly. Remote tethering and sharing of flat-rate charged wide area data services is another candidate application. Clearly for multimedia (audio or video) one could also pool network links to support higher rates, or lower power consumption (depending on user preference) than on a single device. The social aspect of our work is that we take advantage of the pre-existing (or declared) relationship between the set of user/owners of the mobile devices to avoid the problem of how to trust and incentivize sharing. This talk will describe the approach, the system, and some initial results and thoughts about the future of such systems.

**Tutorial: (180 min)**

Session Chair: Michael Rohs

**“Mobile Applications: From the lab to the market”**

**Prof. Frank Fitzek**, University of Aalborg, Denmark

*Abstract.*

Mobile apps are dominating the mobile communication ecosystem like nothing else ever did before. On the long run applications will not be the simple applications we see nowadays. Innovation will be the main engine behind the future mobile apps. The tutorial will explain the mobile app ecosystem and explain how innovation coming from research is becoming the vital ingredient for mobile apps.

### **Demos I: (30 min)**

Session Chair: Chrysostomos Chrysostomou

#### **Mobile Device for Emergency Health Care Support**

**Efthymoulos Kyriacou** and **Constantinos Pattichis**

*Frederick University, Cyprus, and University of Cyprus*

#### **WISENSE - Remote Monitoring and Control of Indoor and Outdoor Industrial, Commercial and Environmental Applications**

**Marios Milis**, **Anastasis Kounoudes**

*SignalGeneriX Ltd, Limassol, Cyprus*

### **Demos II: (30 min)**

Session Chair: Chrysostomos Chrysostomou

#### **First Query Term Extraction from Current Webpage for Mobile Applications**

**Masayuki Okamoto**, **Nayuko Watanabe**, **Masaaki Kikuchi**, **Takayuki Iida**, **Kenta**

**Sasaki**, **Kensuke Horiuchi**, **Tomohiro Yamasaki**, **Sumi Omura** and **Masanori**

**Hattori**

*Toshiba Corporation, Japan*

#### **Dynamic versus Static Peephole Navigation of VR Panoramas on Handheld Devices**

**Wolfgang Hürst** and **Tair Bilyalov**

*Utrecht University, The Netherlands*

### **Demos III: (30 min)**

Session Chair: Chrysostomos Chrysostomou

#### **Managing Social Adoption and Technology Adaption in Longitudinal Studies of Mobile Media Applications**

**Bram Lievens**, **Natasa Milic-Frayling**, **Valentine LeRouge**, **Jo Pierson**, **Gerard**

**Oleksik**, **Rachel Jones**, and **Jamie Costello**

*IBBT-SMIT, Belgium, Microsoft Research, UK, and Instrata Ltd, UK*

#### **VMoverDTN: Delivering Voicemails over Delay Tolerant Networks**

**Constantinos Djouvas** and **Lambros Lambrinos**

*Cyprus University of Technology, Cyprus*

## **Technical Session I: User Experience (90 min)**

Session Chair: Natasa Milic-Frayling

### [Cultural Differences in Smartphone User Experience Evaluation](#)

*Tanja Walsh, Piia Nurkka and Rod Walsh*

*Tampere University of Technology, and Nokia Research Center, Finland*

### [User Experience of Social Ad Hoc Networking: Findings from a Large-Scale Field Trial of TWIN](#)

*Kaisa Väänänen-Vainio-Mattila, Petri Saarinen, Minna Wäljas, Marko*

*Hännikäinen, Heikki Orsila and Niko Kiukkonen*

*Tampere University of Technology, and Nokia Research Center, Finland*

### [Analysing User Experience of Personal Mobile Products through Contextual Factors](#)

*Hannu Korhonen, Juha Arrasvuori and Kaisa Väänänen-Vainio-Mattila*

*Nokia Research, and Tampere University of Technology, Finland*

## **Technical Session II: Awareness and Assessment (110 min)**

Session Chair: Niels Henze

### [Increasing Energy Awareness Through Web-enabled Power Outlets](#)

*Markus Weiss and Dominique Guinard*

*ETH Zurich, Switzerland*

### [Development of a Mobile User Interface for Image-based Dietary Assessment](#)

*SungYe Kim, TusaRebecca Schap, Marc Bosch, Ross Maciejewski, Edward J.*

*Delp, David S. Ebert and Carol J. Boushey*

*Purdue University, USA*

### [By their apps you shall understand them: mining large-scale patterns of mobile phone usage](#)

*Trinh-Minh-Tri Do and Daniel Gatica-Perez*

*Idiap Research Institute, and EPFL, Switzerland*

### [Recognizing conversational context in group interaction using privacy-sensitive mobile sensors \(short paper\)](#)

*Dinesh Babu Jayagopi, Taemie Kim, Alex (Sandy) Pentland and Daniel Gatica-Perez*

*Idiap Research Institute and EPFL, Switzerland, and MIT Media Lab, USA*

## **Technical Session III: Sharing and Discovering (110 min)**

Session Chair: Enrico Rukzio

### [User Experience of Mobile Photo Sharing in the Cloud](#)

*Elina Vartiainen and Kaisa Väänänen-Vainio-Mattila*

*Nokia Research Center, and Tampere University of Technology, Finland*

### [Burn-to-Share - Content Sharing with Mobile Projectors \(short paper\)](#)

*Antti Virolainen, Panu Åkerman and Jonna Häkkinä*

*Nokia Research Center, Finland*

## Evaluating an Avatar-Based User Interface for Discovering New Music

*Jukka Holm, Arto Lehtiniemi and Antti Eronen*

*Tampere University of Technology, and Nokia Research Center, Finland*

## A Crowdsourcing Based Mobile Image Translation and Knowledge Sharing Service

*Yefeng Liu, Vili Lehdonvirta, Mieke Kleppe, Todorka Alexandrova, Hiroaki Kimura and Tatsuo Nakajima*

*Waseda University, Japan, Helsinki Institute for Information Technology, Finland, and Eindhoven University of Technology, Netherlands*

## Technical Session IV: Communicating and Social Networking (90 min)

Session Chair: Kaisa Väänänen-Vainio-Mattila

### Perceptions of Visualizing Personal Mobile Communication Patterns

*Susanna Paasovaara, Ari-Heikki Sarjanoja, Vesa Kyllönen, Jussi Huhtala, Jani Mäntyjärvi and Jonna Häkkinä*

*Tampere University of Technology, Nokia Research Center, and VTT Technical Research Center, Finland*

### Managing Social Adoption and Technology Adaption in Longitudinal Studies of Mobile Media Applications

*Bram Lievens, Natasa Milic-Frayling, Valentine LeRouge, Jo Pierson, Gerard Oleksik, Rachel Jones, and Jamie Costello*

*IBBT-SMIT, Belgium, Microsoft Research, UK, and Instrata Ltd, UK*

### Enhancing Interactive Public Displays with Social Networking Services

*Simo Hosio, Hannu Kukka, Marko Jurmu, Timo Ojala and Jukka Riekk*

*University of Oulu, Finland*

## Technical Session V: Mobile Learning and Edutainment (90 min)

Session Chair: Wolfgang Huerst

### Viable and Portable Architecture for Pervasive Learning Spaces

*Teemu H. Laine, Carolina Islas Sedano, Erkki Sutinen and Mike Joy*

*University of Eastern Finland, and University of Warwick, UK*

### Mobile Urban Drama for Multimedia-Based Out-of-School Learning

*Allan Hansen, Karen Johanne Kortbek and Kaj Grønbaek*

*Aarhus University, Denmark*

### Gesture Activated Mobile Edutainment (GAME) - Intercultural Training of Nonverbal Behavior with Mobile Phones

*Matthias Rehm, Karin Leichtenstern, Jörg Plomer, and Christian Wiedemann*

*Aalborg University, Denmark, and University of Augsburg, Germany*

## Technical Session VI: Location and Context (90 min)

Session Chair: Lambros Lambrinos

### Discovering Human Places of Interest from Multimodal Mobile Phone Data

*Raul Montoliu and Daniel Gatica-Perez*

*Jaume I University, Spain, and Idiap Research Institute, Switzerland*

### [A Diary Study on Annotating Locations with Mixed Reality Information](#)

*Tuomas Vaittinen, Tuula Kärkkäinen and Thomas Olsson  
Nokia Research Center, and Tampere University of Technology, Finland*

### [CAMB: Context-Aware Mobile Browser](#)

*Anar Gasimov, Fabio Magagna and Juliana Sutanto  
ETH Zurich, Switzerland*

## **Technical Session VII: Mobile Media and Mobile Web (90 min)**

Session Chair: Tatsuo Nakajima

### [The Ambient Media Player - A Media Application Remotely Operated by the Use of Mobile Devices and Gestures](#)

*Andreas Lorenz and Marc Jentsch  
RWTH Aachen University, and Fraunhofer Institute for Applied Information Technology, Germany*

### [Free-Hand Gestures for Music Playback: Deriving Gestures with a User-Centred Process](#)

*Andreas Löcken, Niels Henze, Tobias Hesselmann, Martin Pielot and Susanne Boll  
University of Oldenburg, and OFFIS - Institute for Information Technology, Germany*

### [First Query Term Extraction from Current Webpage for Mobile Applications](#)

*Masayuki Okamoto, Nayuko Watanabe, Masaaki Kikuchi, Takayuki Iida, Kenta Sasaki, Kensuke Horiuchi, Tomohiro Yamasaki, Sumi Omura and Masanori Hattori  
Toshiba Corporation, Japan*

## **Technical Session VIII: Mobile Applications and Interaction Techniques (100 min)**

Session Chair: Michael Rohs

### [Dynamic versus Static Peephole Navigation of VR Panoramas on Handheld Devices](#)

*Wolfgang Hürst and Tair Bilyalov  
Utrecht University, The Netherlands*

### [Handheld Devices for Mobile Augmented Reality](#)

*Eduardo E. Veas and Ernst Kruijff  
Graz University of Technology, Austria*

### [Augmented Reality to Enhance Visitors Experience in a Digital Zoo \(short paper\)](#)

*Johannes Karlsson, Shafiq ur Réhman and Haibo Li  
Umeå University, Sweden*

### [How to sell microinsurance via smartphones: Experiences from a first deployment in South Africa \(short paper\),](#)

*Stephan von Watzdorf and Florian Michahelles  
ETH Zurich, Switzerland*