Pervasive Health 2009 Final Program

Wednesday, April 1

8.50 – 9:00  Opening
Place: Northampton Suite
Kay Connelly and Bert Arnrich

9.00 – 10:00  Keynote Speech
Place: Northampton Suite
Title: Ambient Technologies for the elderly population
Prof. Dr. med. Elisabeth Steinhagen-Thiessen

10.00 – 11:00  Session 1: Gait
Place: Northampton Suite
Session Chair: Gerhard Troester
• Developing a Motion Language: Gait Analysis from Accelerometer Sensor Systems
  Anita P Sant'Anna, Nicholas Wickström
• Design and Testing of Lightweight Inexpensive Motion-Capture Devices with Application to
  Clinical Gait Analysis
  Eric Wade, Maja J Mataric
• A Wireless System for Gait and Posture Analysis Based on Pressure Insoles and Inertial
  Measurement Units
  Marco Benocci, Laura Rocchi, Elisabetta Farella, Lorenzo Chiari, Luca Benini

11.00 – 11:20  Break

11:20 – 12:40  Session 2: User-Centered Investigations
Place: Northampton Suite
Session Chair: Kay Connelly
• Investigating the Potential of In-home Devices for Improving Medication Adherence
  Young S Lee, Joe Tullio, Nitya Narasimhan, Pallavi Kaushik, Jonathan R Engelsma, Santosh
  Basapur
• User Experiences of Mobile Wellness Applications in Health Promotion
  Aino Ahtinen, Elina Mattila, Antti Väänänen, Lotta Hynninen, Jukka Salminen, Esa Koskinen,
  Klaus Laine
• Flowie: A Persuasive Virtual Coach to Motivate Elderly Individuals to Walk
  Íñaki Merino Albaina, Thomas Visser, Charles A.P.G. van der Mast, Martijn H. Vastenburg
• Persuasion not required: Improving our understanding of the sociotechnical context of dietary
  behavioural change.
  Julie Maitland, Matthew Chalmers, Katie A. Siek

12.40 – 14:20  Lunch Break
14:20 – 15:40  **Parallel Sessions (3&4)**

**Session 3: Remote Rehabilitation**
Place: Room Level 3C
Session Chair: Maria Martini

- A Home-Based Care Model for Outpatient Cardiac Rehabilitation Based on Mobile Technologies
  Antti Sarela, Jukka Salminen, Esa Koskinen, Ole Kirkeby, Ilkka Korhonen, Darren Walters
- A design framework for a home-based stroke rehabilitation system: identifying the key components
  Stefan J Rennick Egglestone, Lesley Axelrod, Thomas Nind, Ruth Turk, Anna Wilkinson, Jane Burridge, Geraldine Fitzpatrick, Sue Mawson, Zoe Robertson, Anne Marie Hughes, Kher Hui Ng, Will Pearson, Nour Shublaq, Penny Probert-Smith, Ian Ricketts, Tom Rodden
- Decision support for teletraining of COPD patients
  Bianying Song, Klaus-Hendrik Wolf, Matthias Gietzelt, Osama al Scharaa, Uwe Tegtbur, Reinhold Haux, Michael Marschollek
- Gesture Therapy: a Clinical Evaluation
  Luis E Sucar

**Session 4: Sensor Frameworks**
Place: Room C302
Session Chair: Muttukrishnan. Rajarajan

- On the Design of Distributed Autonomous Embedded Systems for Biomedical Applications
  Jose A Germano, Rui Ramalho, Leonel Sousa
- Performance Analysis of an Activity Monitoring System using the SPINE Framework
  Roberta Giannantonio, Raffaele Gravina, Philip Kurysko, Ville-Pekka Seppä, Fabio Bellifemine, Jari Hyttinen, Marco Sgroi
- An Integrated Multi-Sensing Framework for Pervasive Healthcare Monitoring
  M. ElHelw, J. Pansiot, D. McIlwraith, R. Ali, B. Lo, L. Atallah
- Realising Management and Composition of Self-Managed Cells in Pervasive Healthcare
  Alberto E Schaeffer-Filho, Emil Lupu, Morris Sioman

15:40 – 17:30  **Posters Session & Coffee**
Place: Room C350

**Thursday, April 2**

9.00 – 10:00  **Session 5: Fall Prevention and Detection**
Place: Northampton Suite
Session Chair: Ian McClelland:

- A Pervasive Solution for Risk Awareness in the context of Fall Prevention
  Nicholas Caporusso, Irene Lasorsa, Oliviero Rinaldi, Leonardo La Pietra
- A Theoretic Algorithm for Fall and Motionless Detection
  Shumei Zhang, Paul McCullagh, Chris Nugent, Huiru Zheng
- Parkinson’s disease patients’ perspective on context aware wearable technology for auditive assistance
  Marc Bächlin, Meir Plotnik, Daniel Roggen, Noit Inbar, Nir Giladi, Jeffrey Hausdorff, Gerhard Tröster
10.00 – 11:00 **Session 6: Semantics**  
Place: Northampton Suite  
Session Chair: Venet Osmani

- Location based semantic annotation for ward analysis  
  Mark J. Weal, Danius T. Michaelides, Kevin R. Page, David C. De Roure, Mary Gobbi, Eloise Monger, Fernando Martinez
- Semantic Coordination of Ambient Intelligent Medical Devices - A Case Study  
  Safdar Ali, Stephan Kiefer
- A Model Driven Ontology-based Architecture for Supporting the Quality of Services in Pervasive Telemedicine Applications  
  Ebrahim Nageba, Jocelyne Fayn, Paul Rubel

11.00 – 11:20 **Break**

11:20 – 12:40 **Session 7: Privacy and Security**  
Place: Northampton Suite  
Session Chair: Yousef Jasemian

- Privacy Enforcement for Distributed Healthcare Queries  
  Michael Siegenthaler, Ken Birman
- Privacy-aware Access to Patient-controlled Personal Health Records in Emergency Situations  
  Md. Nurul Huda, Shigeki Yamada, Noboru Sonehara
- Secure Healthcare Information Exchange for Local Domains  
  Guy C Hembroff, Sead Muftic
- Secure Sensor Data Transmission over Wireless Cellular Networks  
  George M Stamatelos

12.40 – 14:20 **Lunch Break**

14:20 – 16:00 **Panel Session**  
Place: Northampton Suite  
Title: Implementing successful telehealthcare systems – what’s needed?  
Moderator: Ian McClelland, Private Consultant  
Panelists:  
  Professor John Cleland, Professor of Cardiology, University of Hull  
  Charles Lowe, Product Manager, Telehealth Solutions Ltd.  
  Martin Scarfe, WSD Programme Director, London Borough of Newham  
  Dr Kevin Doughty, JRF Centre for Usable Home Technology, U. of York

16:00 – 16:20 **Break**

16:20 – 17:20 **Session 8: Wearable Technologies**  
Place: Northampton Suite  
Session Chair: Bert Arnrich

- Textile sensors to measure sweat pH and sweat-rate during exercise  
  Shirley M Coyle, Deirdre Morris, King-Tong Lau, Dermot Diamond, Nicola Taccini, Daniele Costanzo, Pietro Salvo, Fabio Di Francesco, Maria Giovanna Trivella, Jacques Andre Pochet, Jean Luprano
- Low Power Real-Time Seizure Detection for Ambulatory EEG  
  Kunjan Patel, Chern-Pin Chua, Stephen Faul, C. J. Bleakley
- A fitting Method for Headphones to compensate individual Hearing Impairments  
  Hannah Baumgartner, Arne Schulz, Andreas Hein, Inga Holube, Tobias Herzk
19:30   Conference Dinner
Place:  The Medieval Banquet London
http://www.medievalbanquet.com/home.php
Bus shuttle is organized leaving from City University at 19:00.

Friday, April 3

9.00 – 10:00   Session 9: Hodge Podge
Place: Northampton Suite
Session Chair: Katie Siek

• Informing the Design of an Automated Wayfinding System for Individuals with Cognitive Impairments
  Alan L. Liu, Harlan Hile, Gaetano Borriello, Henry Kautz, Pat A. Brown, Mark Harniss, Kurt Johnson
• Context-aware Multi-lead ECG Compression Based on Standard Image Codecs
  Maria G. Martini, Alessandro Polpetta, Paolo Banelli
• The Smart Condo: Visualizing Independent Living Environments in a Virtual World
  Nicholas M. Boers, David Chodos, Jianzhao Huang, Pawel Gburzyński, Ioannis Nikolaidis, Eleni Stroulia

10.00 – 11:00   Session 10: On the Body
Place: Northampton Suite
Session Chair: Daniel Roggen

• A Context Aware Wireless Body Area Network (BAN)
  Tony O'Donovan, John O'Donoghue, Cormac J Sreenan, Dave Sammon, Philip O'Reilly, Kieran O'Connor
• Characterization and modeling of dynamic on-body propagation
  Bin Zhen, Minseok Kim, Jun-ichi Takada, Ryuji Kohno
• Vesta: A Secure and Autonomic System for Pervasive Healthcare
  Yanmin Zhu, Morris Sloman, Emil Lupu, Sye Loong Keoh

11.00 – 11:20   Break

11.20 – 12:20   Session 11: Self Management
Place: Northampton Suite
Session Chair: Julie Maitland

• Mobile Support for Personalized Therapies - OmniSCOPE: Richer Artefacts and Data Collection
  Marco de Sá, Luís Carriço
• Pervasive Pain Monitoring System - User Experiences and Adoption Requirements in the Hospital and Home Environments
  Ismo Alakärppä, Jukka Riekki, Rauni Koukkula
• P4Well Concept to Empower Self-Management of Psychophysiological Wellbeing and Load Recovery
  Antti P Happonen, Elina Mattila, Marja-Liisa Kinnunen, Veikko Ikonen, Tero Myllymäki, Kirsiikka Kaipainen, Heikki Rusko, Raimo Lappalainen, Ilkka Korhonen

12.20 – 12:30   Closing Remarks and Announcement of Pervasive Health 2010
Place: Northampton Suite
List of Accepted Posters:

A wearable passive force sensor powered by an active interrogator intended for intra-splint use for the detection and recording of bruxism  
C. González, A. Díaz Lantada

Problems: reflecting on a technology probe into peer involvement in cardiac rehabilitation  
Julie Maitland, Matthew Chalmers

Web Services to Improve Interoperability of Home Healthcare Devices  
Guido Moritz, Elmar Zebs, Frank Golatowski, Dirk Timmermann, Regina Stoll

Managing First Response Medical Aids With An Altruistic Web Application  
Stefano Ferretti, Silvia Merri, Marco Rocetti, Claudio Sermenghi, Vito Conforti

A Wearable Inductor Channel Design for Blood Pressure Monitoring System in Daily Life  
Seulki Lee, Jerald Yoo, Hoi-Jun Yoo

Prototyping of a Remote Monitoring System for a medical Personal Area Networks using Python  
M. J. Morón, J. R. Luque, A. Gómez-Jaime, E. Casilari, A. Díaz-Estrella

PERFORM: A system for the monitoring and management of persons with chronic motor neurodegenerative disorders  
Dina Baga, Dimitrios Fotiadis, Spiros Konitsiotis, Metin Akay

A secure electronic diary and data collection tool  
Kenny Morrison, Ian W Ricketts, Martyn C Jones, Derek W Johnston, Nigel B Pitts, Frank M Sullivan

Intelligent Electrode Design for Long-Term ECG Monitoring at Home  
Geng Yang, Jian Chen, Hannu Tenhunen, Li-Rong Zheng

Wearable Sensors for Pervasive Healthcare Management  
Daniel Olguin Olguin, Peter A. Gloor, Alex (Sandy) Pentland

Enabling Pervasive Healthcare by Means of Event-Driven Service-Oriented Architectures - The Case of Bed Management in Mid-Sized to Large-Sized Hospitals  
René Fitterer, Bart de Witte

User-Centered Activity Management System for Elderly  
Oljacques Benoit, Krier Marc, Feltz Fernand, Ferring Dieter, Hoffmann Martine

A Modular Clinical Decision Support System  
Fran Wu, Mitch Williams, Peter Kazanzides, Ken Brady, Jim Fackler

Human activity recognition supporting context-appropriate reminders for elderly  
Venet Osmani, Daqing Zhang, Sasitharan Balasubramian

Towards a Sustainable e-Health Deployment: An Integrated Medical Information System for Sri Lankan Case  

Server-Assisted Context-Dependent Pervasive Wellness Monitoring  
Archan Misra, Ben Falcuk, Shoshana Loeb