BodyNets 2008 Technical Sessions

Thursday, 13th March 2008

Location: Brickyard Artisan Court, Room 190

8:30 am – 9:00 am: Registration

9:00 am – 10:30 am: Tutorial 1
- **Title**: Body Sensor Networks for Health-care Monitoring: Premises, Challenges and Prospective
- **Speaker:** Roozbeh Jafari, University of Texas at Dallas

10:30 am – 11:00 am: Coffee Break

11:00 am – 12:30 pm: Tutorial 1 (continued)

12:30 pm - 2:00 pm: Lunch

2:00 pm - 3:30 pm: Tutorial 2
- **Title**: Energy-efficient Design for Mobile Phone-Centered Wireless Body Area Networks
- **Speaker:** Lin Zhong, Rice University

3:30 pm – 4:00 pm: Coffee Break

4:00 pm – 5:30 pm: Tutorial 2 (continued)

5:30 pm – 7:00 pm: School of Computing and Informatics Welcome Reception and Lab Tours.

Friday, 14th March, 2008

Location: Brickyard Artisan Court, Room 110

7:30 am – 8:00 am: Registration

8:00 am – 8:15 am: **Welcome Address**: Dr. Deirdre Meldrum, Dean, Ira A. Fulton School of Engineering, Arizona State University.
Opening Remarks: Dr. Sandeep K. S. Gupta, TPC Chair.

8:15 am – 9:30 am: Keynote

- **Title:** Artificial Intelligence on the Body, in the Home, and Beyond
- **Speaker:** Dr. Diane Cook, Washington State University

9:30 am – 10:00 am: Coffee Break

10:00 am – 10:15 am: Center for Adaptive Neural Systems Best Paper Award Presentation
Dr. James Abbas and Dr. Ranu Jung, Co-Directors of Center for Adaptive Neural Systems, Arizona State University.

10:15 am – 11:40am:
Session I: Medical Applications
Chair: Dr. Tim Buchman

- **The SmartCane System: An Assistive Device for Geriatrics (Short Paper)**
Winston Wu, Lawrence Au, Brett Jordan, Thanos Stathopoulos, Maxim Batalin, William Kaiser, Alireza Vahdatpour, Majid Sarrafzadeh, Meika Fang, Joshua Chodosh

- **Preliminary Studies for the development of a Ubiquitous Computing and Health-monitoring System for Wheelchair Users (Work-in-Progress Paper)**
Jongbae Kim, Sangyeun Cho , Seung-Jae Kim

- **A wireless platform for fall and mobility monitoring in health care (Short Paper)**
Pepijn W J Van de Ven, Alan Bourke, John Nelson, Gearaid O'Laighin

- **Physiological Signal Monitoring in the Waiting Areas of an Emergency Room (Regular Paper)**
Dorothy Curtis, Jason Waterman, Jacob Bailey, Eugene Shih, Thomas Stair, John Guttag, Robert Greenes, Lucila Ohno-Machado

11: 40 am – 1:00 pm:
Session II: Software Technology and Platforms
Chair: Dr. Vijay Sivaraman

- **Distributed Pervasive Services using Group Service communication supporting Body Area Networks (Regular Paper)**
Christopher Foley, Sasitharan Balasubramaniam, Dimitri Botvich, William Donnelly, Stefan Michaelis, Jens Schmutzer, Thomas Stair

- **Service Discovery and Composition in Body Area Networks (Short Paper)**
Matteo Coloberti, Clemens Lombriser , Daniel Roggen, Gerhard Troester, Renata Guarneri, Daniele Riboni

- **A Framework for Creating Healthcare Monitoring Applications Using Wireless Body Sensor Networks (Work-in-Progress Paper)**
Sameer Iyengar , Filippo Tempia , Raffaele Gravina , Antonio Guerrieri , Giancarlo Fortino , Alberto Sangiovanni-Vincentelli

- **CareNet: An Integrated Wireless Sensor Networking Environment for Remote Healthcare (Work-in-Progress Paper)**
  Yuan Xue , Stephen Wicker , Philip J Kuryloski , Shanshan Jiang , Roozbeh Jafari, Ruzena Bajcsy , Yanchuan Cao , Sameer Iyengar

1:00 pm – 2:00 pm: Lunch
"**Welcome by General Chair**": Dr. Sethuraman Panchanathan, Director, School of Computing and Informatics, Arizona State University.

2:00 pm – 3:30 pm:
Session III: Communication Techniques
Chair: Dr. Eric Yeatman
- **Effect of quantization on beamforming in binaural hearing aids (Short Paper)**
  Sriram Srinivasan , Ashish Pandharipande , Kees Janse

- **Investigation of Wireless Data Transmission between Hearing Aids (Short Paper)**
  Crista L. Malick, Steven J. Franke, Qi Xie, Jennifer T. Bernhard, Mitesh Parikh, Douglas L. Jones, and Francois Callias.

- **Body-Coupled Communication for Body Sensor Networks (Short Paper)**
  Adam Barth, Stephen Wilson, Mark Hanson, Harry Powell , Dincer Unluer, John Lach

- **Analysis of Body Sensor Network Using Human Body as the Channel (Short Paper)**
  Jerald Yoo, Namjun Cho, Hoi-Jun Yoo

3:30 pm – 4:00 pm: Coffee break

4:00 pm – 5:00 pm:
Session IV: Powering and Energy
Chair: Dr. Douglas Jones
- **Adapting Radio Transmit Power in Wireless Body Area Sensor Networks (Regular Paper)**
  Shuo Xiao, Vijay Sivaraman, and Alison Burdett

- **Approaches to Self-Powered Biochemical Sensors for In-Vivo Application (Work-in-Progress Paper)**
  Eric M. Yeatman, Danny O'Hare, Cate Dobson, Eleni Bitziou

- **Joint Encryption/Multiple Access for Body Area Sensor Networks (Work-in-Progress Paper)**
  Walter D. Leon-Salas, Yugyung Lee, Deep Medhi

6:15 pm – 7:15 pm: Enactive Arts Immersive Installation
Venue: iStage/Digital Arts Ranch

Organizer: Dr. Ellen Campana, Assistant Professor, Arts Media and Engineering, Arizona State University

7:30 pm (Starting):   Banquet
Venue: University Club, Arizona State University

Saturday, 15th March, 2008

Location: Brickyard Artisan Court, Room 110

7:30 am – 8:00 am: Registration

8:00 am – 8:15 am: Introduction, Consortium for Embedded Systems Best Paper Award Presentation
Prof. Sarma Vrudhula, Director of Consortium for Embedded Systems, Arizona State University.

8:15 am – 9:30 am: Keynote
- **Title:** On Innovation, Quality of Life and Technology of BodyNets
- **Speaker:** Dr. Sundaresan Jayaraman, Georgia Institute of Technology

9:30 am – 10:00 am: Coffee Break

10:00 am – 11:15 am: Panel Discussion
Organizer: Mary Murphy-Hoye (Intel Corp.)
Topic: Context Aware BodyNets

11:15am – 1:00 pm:
Session V: Activity and Signal Classification
Chair: Dr. D. K. Arvind
- **ECG Segmentation in a Body Sensor Network Using Adaptive Hidden Markov Models (Regular Paper)**
  Huaming Li, Jindong Tan

- **Body Posture Identification using Hidden Markov Model with Wearable Sensor Networks (Regular Paper)**
  Muhannad Quwaider, Subir Biswas

- **Classifying Wheelchair Propulsion Patterns with a Wrist Mounted Accelerometer (Short Paper)**
  Brian French, Asim Smailagic, Dan Siewiorek, Vishnu Ambur, Divya Tyamagundlu

- **Analysis of human performance using physiological data streams (Short Paper)**

Gaurav Pradhan, Balakrishnan Prabhakaran

1:00 pm – 2:00 pm: Lunch
"Introduction to BMI @ ASU"
Talk: Can Biomedical Informatics Save Your Life?
Speaker: Dr. Robert A. Greenes, Chair, Department of Biomedical Informatics School of Computing and Informatics, Arizona State University

2:00 pm – 3:15 pm:
Session VI: HCI/Wearable Computing
Chair: Dr. Jindong Tan

- **SMASH: A Distributed Sensing and Processing Garment for the Classification of Upper Body Postures (Regular Paper)**
  Holger Harms, Oliver Amft, Daniel Roggen, Gerhard Troester

- **Modeling of EOG and Electrode Position Optimization for Human-Computer Interface (Short Paper)**
  Niina Nojd, Jari Hyttinen

- **An Architecture for Smart Textiles (Work-in-Progress)**
  Mark T Jones, Thomas Martin, Braden Sawyer

3:15 pm – 3:45 pm: Coffee break

3:45 pm - 5:00 pm:
Session VII: Communication Protocols
Chair: Dr. Eleni Karatza

- **On the performance of Bluetooth and IEEE 802.15.4 radios in a body area network (Regular Paper)**
  Rahul C. Shah, Lama Nachman and Chieh-yih Wan

- **IEEE Body Area Network And Medical Implant Communication (Short Paper)**
  Bin Zhen, Huan-Bang Li, Ryuji Kohno

- **Novel QoS Scheduling and Energy-saving MAC protocol for Body Sensor Networks Optimization (Short Paper)**
  Begonya Otal, Luis Alonso, Christos Verikoukis

5:00 pm – 6:15 pm:
Session VIII: Non-Medical Applications
Chair: Dr. Pepijn Van Den Ven

- **The Speckled Golfer (Regular Paper)**
  D K Arvind, Andrew Bates

- **A Wearable Wireless RFID System for Accessible Shopping Environments (Regular Paper)**

Sreekar Krishna, Vineeth Balasubramanian , Narayanan Chatapuram Krishnan , Terri Hedgpeth

- **SerPens -- A Tool for Semantically Enriched Location Information on Personal Devices (Work-in-Progress Paper)**
  Sourav Bhattacharya, Joonas Kukkonen, Petteri Nurmi, Patrik Floreen

6:15 pm – 6:30 pm: Concluding Remarks