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 Guameri, Daniele Riboni

  Sameer Iyengar, Filippo Tempia, Raffaele Gravina, Antonio Guerrieri, Giancarlo Fortino, Alberto Sangiovanni-Vincentelli
Yuan Xue, Stephen Wicker, Philip J Kuryloski, Shanshan Jiang, Roozbeh Jafari, Ruzena Bajcsy, Yanchuan Cao, Sameer Iyengar

1:00 pm – 2:00 pm:
"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
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

11:15 am – 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)
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