International Workshop
Mobile Networks
For Biometric Data Analysis
Ancona, Italy, October 30-31, 2014

Preliminary Program

www.dii.univpm.it/mBiDA

Workshop registered by the German Academic Exchange Service (DAAD) under contract number 57086772 and financed by the Federal Foreign Office (Auswärtiges Amt, AA) in Germany.

Sponsored by

Organized by
International Workshop
Mobile Networks for Biometric Data Analysis
mBiDA 2014

October 30-31, 2014 Ancona, Italy

Steering Committee
M. Conti (Univ. Politecnica delle Marche, Italy)
N. Martínez Madrid (Reutlingen Univ., Germany)
R. Seepold (HTWG Konstanz, Germany)

Program Committee
A. Brito (Universidade Federal da Paraiba, João Pessoa, Brasil)
F. Chiaraluce (Univ. Politecnica delle Marche, IT)
M. Conti (Univ. Politecnica delle Marche, Italy)
L. Fanucci (Università di Pisa, Pisa, Italy)
V. Frascolla (Intel Mobile Communications, Neubiberg, Germany)
M. Grammatikakis (TEI Crete, Heraklion, Greece)
G. Kornaros (TEI Crete, Heraklion, Greece)
F. Lehocki (Slovak University of Technology in Bratislava, Slovakia)
R. Magjarević (University of Zagreb, Croatia)
N. Martínez Madrid (Reutlingen Univ., Germany)
J.A. Ortega (University of Seville, Spain)
A. Pardo (The University of Sydney, Australia)
C.S. Pattichis (University of Cyprus, Cyprus)
T. Riesgo (Universidad Politècnica de Madrid, Madrid, Spain)
L. Rossi (INRCA, Ancona, Italy)
S. Saponara (Università di Pisa, Pisa, Italy)
R. Seepold (HTWG Konstanz, Germany)
M.T. Tarata (University of Medicine and Pharmacy of Craiova, Romania)
E. Zanaj (Polytechnic Univ. of Tirana, Albania)

Organization Committee
M. Conti (Univ. Politecnica delle Marche, Italy)
P. Datko (HTWG Konstanz, Germany)
S. Orcioni (Univ. Politecnica delle Marche, Italy)
D. Scherz (HTWG Konstanz, Germany)
R. Seepold (HTWG Konstanz, Germany)
E. Yay (Reutlingen University, Germany)

Co-Organization: PhD School in Engineering Sciences, Università Politecnica delle Marche

Local Organization
Web Design: M. Conti, F. Francescangeli
Proceedings: S. Orcioni
Administrative Office: D. Boccoli
Event Organization: Dipartimento di Ingegneria dell’Informazione, e-Living
International Workshop
Mobile Networks for Biometric Data Analysis
mBiDA 2014
Facoltà di Ingegneria, via Brecce Bianche, Ancona, Room 160/3

Program
October 30, 2014

Registration 8:30-9:15
Welcome 9:30-9:45
Round Table 9.45-11.00 “Service and Technologies for Active Ageing”
  Francesco Piazza, UnivPM
  Francesca Gaetini, A Tlc
  Lorena Rossi, INRCA
  Francesca Cesaroni, COOSS Marche

Coffee break 11:10-11:30 (at Faculty Club, Facoltà di Ingegneria)

Session 1 11:40-12:40 “ICT for health care” (4 papers)
Lunch 12:50-14:20 (at Faculty Club, Facoltà di Ingegneria)
Poster session (5 papers)

Session 2 14:30-15:50 “Biometric data in automotive and home applications” (4 papers)
Coffee break 15:55-16:15 (at Faculty Club, Facoltà di Ingegneria)

Session 3 16:20-17:30 “Embedded systems for biometric data analysis” (4 papers)
19:30-20:30 Visit of wine farm “Cantine Moroder”
20:30-23:00 Conference dinner at “Azienda Agricola Moroder”, Via Montacuto, 121 Ancona

October 31, 2014

Session 4 9:00-10:40 “Biometric data analysis: EMG and ECG” (5 papers)
Coffee break 10:45-11:00 (at Faculty Club, Facoltà di Ingegneria)
Session 5 11:10-12:50 “ICT for gait analysis” (5 papers)
Closing 12:50-13.00
Session 1, 11:50-12:50 “ICT for health care”
(Chairman Massimo Conti)
1 Monica De Angelis, Rosita Pretaroli, Andrea Monteriù, Francesca Severini, Claudio Socci and Maurizio Ciaschini, "The ICT industry and the health care system"
2 Lorenza Lupini and Francesca Scocchera, "End-user organization and R&D of ICT projects: a non-intrusive model for the collection and analysis of data, feedback and needs"
3 (short) Christoph Dermati, Benedikt Martínz, Artur Kostka, Lars Pfeil, Ralf Lange, Matthias Hermann and Ralf Seepold, "Determining Health Status and Weather Conditions to Recommend Behavioral Activities"
4 (short) Thomas Walzer, Emre Yay and Martínz Madrid Natividad, "eKlarA – A clothing cycle assistant system supporting functionally impaired people"

Poster Session (Faculty club)
1 Davide Ortenzi, Alessandro Freddi, Sauro Longhi, Andrea Monteriù and Mariorosario Prist, "A novel shelving system for nutrition habits measuring"
2 Massimo Conti, Mirko Carloni, Rocco D'Aparo, Pierpaoio Scorrano and Berardo Naticchia, "Battery Monitor for Wireless Sensor Networks"
3 Angela Agostinelli, Corrado Giuliani, Francesco Di Nardo, Sandro Fioretti and Laura Burattini, "Extraction of the fetal ECG in noninvasive recordings using a new method based on segmented-beat modulation"
4 Thomas Wegmann and Ralf Seepold, "Step detection and orientation sensing with a low-cost embedded sensor"

Session 2, 14:30-15:50 “Biometric data in automotive and home applications”
(Chairman Ralf Seepold)
1 Emre Yay and Natividad Martinez Madrid, "Considering driver stress to increase the user acceptance while generating recommendations in an energy-efficiency and safety relevant driving system"
2 Patrick Datko, Natividad Martinez Madrid and Ralf Seepold, "Intelligent generation of navigation routes based on individual stress level"
3 Laura Montanini, Ennio Gambi and Susanna Spinsante, "Automatic Drowsiness Detection Through Visual Analysis for Mobile Android Devices"
4 Giorgio Biagetti, Paolo Crippa, Alessandro Curzi, Laura Falaschetti, Simone Orcioni and Claudio Turchetti, "A distributed speaker identification system for personalized home control"

Session 3, 16:20-17:30 “Embedded systems for biometric data analysis”
(Chairman Simone Orcioni)
1 (short) Jens Gansloser and Ralf Seepold, "A new Sensor for a Heart Rate Monitor based on Photoplethysmogram"
2 Giorgio Biagetti, Paolo Crippa, Simone Orcioni and Claudio Turchetti, "An inexpensive circuit solution for the acquisition of the ECG signal with wireless EMG sensors"
3 Enrico Camilloni, Giuseppe Demaso-Gentile, Cristiano Scavongelli and Massimo Conti, "Energy Harvesting for Body Area Networks"
4 Indrit Enesi and Blerina Zanaj, "Implementing Steganocryptography in Scanner Medical Images"
October 31, 2014

Session 4, 9:00-10:40 “Biometric data analysis: EMG and ECG”
(Chairman Natividad Martinez)

1. Giorgio Biagetti, Paolo Crippa, Simone Orcioni and Claudio Turchetti, "Parameter estimation of surface EMG MUAP by means of power cepstrum deconvolution"
2. Alessandro Mengarelli, Elvira Maranesi, Laura Burattini, Sandro Fioretti and Francesco Di Nardo, "A non-invasive assessment of variability in sEMG signals from lower limb muscles during gait"
3. Mohammed Rajab and Ralf Seepold, "Dynamic threshold calibration for RR interval detection in a QRS complex"
4. Wilhelm Daniel Scherz, Juan Ortega, Natividad Martinez Madrid and Ralf Seepold, "QRS complex detection, analysis and preprocessing to determine stress"
5. Elvira Maranesi, Micaela Morettini, Francesco Palmieri, Francesco Di Nardo and Laura Burattini, "Preventing sudden cardiac death in sports: a novel monitoring service of the heart-rate variability trough wearable sensors"

Session 5, 11:10-12:50 “ICT for gait analysis”
(Chairman Sandro Fioretti)

1. Vinicio Barone and Sandro Fioretti, "Integration of smartphones and webcam for the measure of spatial-temporal parameters of gait for treadmill use"
2. Elvira Maranesi, Sandro Fioretti, Laura Burattini and Francesco Di Nardo, "Functional Reach Test evaluated by wireless surface electromyography: a non-invasive assessment of fall risk in diabetic patients"
3. Elvira Maranesi, Marta Petrini, Giacomo G. Ghetti, Oriano Mercante, Laura Burattini, Francesco Di Nardo and Sandro Fioretti, "An innovative approach to compute the Functional Ambulation Profile (FAP) Score"
4. Giuseppe De Maso-Gentile, Cristiano Scavongelli, Massimo Conti, Luca Basili, Stefano Pirani and Simone Orcioni, "Use of a smartphone for fall detection"
5. Lucia Pepa, Marco Rossini, Luca Spalazzi and Federica Verdini, "Step length estimation for freezing of gait monitoring in Parkinson’s disease"