

# ICHI 2013

Vilamoura, Portugal  
November 7-9, 2013



# IFMBE International Conference on Health Informatics

Theme: "Integrating Information and Communication Technologies  
with Biomedicine for Global Health"



## CONFERENCE COMMITTEE

### Chair:

**Yuan-ting Zhang**

*The Chinese University of Hong Kong, China*

### Co-Chair:

**Jose Principe**

*University of Florida, USA*

## TECHNICAL PROGRAM COMMITTEE

### Chair:

**Paulo Carvalho**

*University of Coimbra, Portugal*

### Co-Chair:

**Paolo Bonato**

*The Harvard-MIT Division of Health  
Sciences and Technology, USA*

**Christopher James**

*Institute of Digital Healthcare, Warwick, UK*

## LOCAL ARRANGEMENT COMMITTEE

### Chair:

**Jorge Henriques**

*University of Coimbra, Portugal*

### Co-Chair:

**Graça Ruano**

*University of Algarve, Portugal*

## PUBLICITY COMMITTEE

### Chair:

**Kang-Ping Lin**

*Chung-Yuan Christian University, Taiwan*

### Co-Chair:

**Sergio Guillen**

*ITACA-Universidad Politécnica de Valencia, Spain*

**Igor Lacković**

*University of Zagreb, Croatia*

**May Wang**

*George Tech -Emory, USA*

## STUDENT PAPER COMPETITION COMMITTEE

### Chair:

**Marc Nyssen**

*Universiteit Brussel, Belgium*

### Co-Chair:

**Mario Fojaz Secca**

*Faculdade de Ciências e Tecnologia*

*Universidade Nova de Lisboa, Portugal*

**ICHI 2013 CONFERENCE WEBSITE:**

<http://www.ichi2013.org/>

## CALL FOR PAPERS

The International Conference on Health Informatics (ICHI) is a new special topic conference initiative by the International Federation of Medical and Biological Engineering (IFMBE) - the world largest organization focusing on biomedical engineering. The inaugural of the IFMBE-ICHI2013 will be held in **Vilamoura, Portugal** on **7-9 November, 2013**. The main theme of the ICHI2013 is "**Integrating Information and Communication Technologies with Biomedicine for Global Health**".

Health informatics becomes a fast-evolving interdisciplinary field and advancing health informatics has been identified as a grand challenge for engineering in the 21<sup>st</sup> century. Maintaining and improving human health in this century will require systems engineering approaches to translate care practices and integrate local, regional, national, and global health information networks. The ICHI2013 will provide a unique forum to examine enabling technologies of sensors, devices and systems that optimize the acquisition, transmission, processing, storage, retrieval of biomedical and health information as well as to report novel clinical applications of health information systems and the deployment of m-Health, e-Health, u-Health, p-Health and Telemedicine. Members of the biomedical, life sciences and engineering communities are encouraged to attend this highly multidisciplinary meeting.

### IMPORTANT DATES

- \* Online Paper Submission Deadline: **July 30, 2013**
- \* Student Paper Competition Deadline: **July 30, 2013**
- \* Notification of Acceptance: **September 1, 2013**
- \* Conference Dates: **November 7-9, 2013**

### SPONSORED BY

- \* International Federation of Medical and Biological Engineering (IFMBE)

### TECHNICALLY CO-SPONSORED BY

- \* University of Coimbra, **Portugal**
- \* University of Zagreb, **Croatia**
- \* Portuguese Society of Biomedical Engineering, **Portugal**



# ICHI 2013

Vilamoura, Portugal  
November 7-9, 2013



# IFMBE International Conference on Health Informatics

Theme: "Integrating Information and Communication Technologies  
with Biomedicine for Global Health"



## INTERNATIONAL PROGRAM COMMITTEE

### Chair:

**Ratko Magjarević**

*University of Zagreb, Croatia*

### Co-Chair:

**Dona Hudson**

*University of California,  
San Francisco (UCSF)*

**Shankar Krishnan**

*Wentworth Institute of  
Technology, USA*

### Members (Invited):

**Maria Teresa Arredondo**

*Universidad Politécnica de Madrid, Spain*

**Vedran Bilas**

*University of Zagreb, Croatia*

**Aurélio Campilho**

*Universidade do Porto, Portugal*

**Sergio Cerutti**

*Politecnico di Milano, Italy*

**Miguel Coimbra**

*University of Porto, Portugal*

**João Paulo Cunha**

*Universidade de Aveiro, Portugal*

**Joerg Habetha**

*Philips Research, Netherlands*

**Jorge Henriques**

*University of Coimbra, Portugal*

**Timo Jämsä**

*University of Oulu, Finland*

**Pablo Laguna**

*Universidad de Zaragoza, Spain*

**Steffen Leonhardt**

*Aachen University, Germany*

**Paulo Mendes**

*University of Minho, Portugal*

**Nikolaos Maglaveras**

*Aristotle University, Greece*

**Miguel Morgado**

*University of Coimbra, Portugal*

**Leandro Pecchia**

*Faculty of Engineering,  
University Park, Nottingham*

**Laura Roa**

*University of Sevilla, Spain*

**Ana Paula Rocha**

*University of Porto, Portugal*

**Maria Graça Ruano**

*University of Algarve, Portugal*

**João Sanches**

*University of Porto, Portugal*

**Niilo Saranummi**

*VTT Technical Research  
Centre of Finland, Finland*

**Günter Schreier**

*Austrian Institute of  
Technology GmbH, Austria*

**Ron Summers**

*Loughborough University, UK*

**Hannu Tenhunen**

*Royal Institute of Technology (KTH),  
Sweden*

**Mark van Gils**

*VTT Technical Research Centre of Finland,  
Finland*

## TOPICS covered by the ICHI 2013 include:

### 1) Information Acquisition

- Unobtrusive sensing
- Wearable and implantable systems
- Body nets, body sensor networks, body area networks
- Energy harvesting technologies
- BioMEMS, Biochips, Medical IC and Health chips
- Point-of-Care Technologies (POCTs)
- Multimodal acquisition

### 2) Information Transmission

- Health information security and privacy
- Low power wireless IC design
- Wireless health end-to-end quality of service
- Internet and web solutions for healthcare delivery
- Interoperability and connectivity
- Picture archive and communication systems (PACS)
- Internet of things (IoT) for health, healthcare, biomedicine and life sciences

### 3) Information Processing

- Multi-scale modeling and information fusion
- Cloudy computing and mobile computing for healthcare
- Healthcare big-data
- Bio-health data mining

### 4) Information Storage and Retrieval

- Context-aware retrieval
- Electronic health records

### 5) Informatics in Biological Systems

- Genomics, proteomics, metabolomics and trans-omics
- Data mining in omics study
- Next generation genome sequencing
- Epigenetic and functional genomics
- Personalized biomarkers
- Computational biology and systems biology
- Biomarker detection
- Bioinformatics for health

### 6) Cardiovascular Health Informatics

- Cardiovascular modeling
- Coronary blood flow dynamics and measurement
- Applications in vascular diseases
- Early diagnostic and monitoring of vulnerable patients
- Characterizations of blood plaque

### 7) Neural Informatics

- Neuro-informatics
- Assistive technologies
- Neural systems and rehabilitation technologies
- Neural modeling
- Brain-computer interfacing and human-computer interfacing

### 8) Biomedical Imaging Informatics

- Real-time imaging
- Multimodal imaging
- Molecular imaging
- Image and video data compression
- Information visualization
- Virtual reality in biomedicine and image-guided surgery

### 9) Deployment of m-Health and Telemedicine

- P-health, m-health, u-health, and e-health systems
- Distributed health information system
- Deployment Issues

### 10) Other Applications

- Applications in the early diagnosis and early treatment of cancers
- Response in public health emergencies
- Against a pandemic such as flu or some other viral threat
- Informatics system against biological weapons and bio-chemical terror
- Environmental health
- Ambient assisted living, smart homes and community healthcare systems
- Therapy and drug delivery
- Bio-inspired robotics and biomimics
- Health Information Technologies Design Assessment & Management

## ABOUT THE CITY *Vilamoura*

Vilamoura is the largest luxury tourist complex in Europe, covering some 20 km<sup>2</sup> of land. It is located in the municipality of Loulé, in the Algarve, Portugal. Its boundaries lie within the parish of Quarteira. Vilamoura is a purpose-built resort and marina which was started from scratch by Cupertino de Miranda, a wealthy banker from Porto, in 1974 and is still expanding outwards from the marine center. The resort is located 23 km west along the coast from Faro and is at 266 kilometers south of Lisbon. The nearest airport is at Faro.

## CONTACT INFORMATIONS

**Dr. Ratko Magjarević:** [Ratko.Magjarevic@fer.hr](mailto:Ratko.Magjarevic@fer.hr)

**Dr. Y.T. Zhang:** [ytzhang@ee.cuhk.edu.hk](mailto:ytzhang@ee.cuhk.edu.hk)

**Dr. Paulo de Carvalho:** [carvalho@dei.uc.pt](mailto:carvalho@dei.uc.pt)