



Workshop lecture hall inside the Strahov Monastery in Prague and Dr. Joan Lasenby, invited speaker from the Engineering Department of the University of Cambridge, UK (photos taken by VIC CVUT).

International Workshop on Computational Intelligence for Multimedia Understanding

by Davide Moroni, Maria Trocan and Ales Prochazka

Over 80 researchers from academia and industry attended a workshop on Computational Intelligence for Multimedia Understanding organized by the ERCIM MUSCLE Working Group in Prague, 29-30 October 2015.

The workshop was held in close collaboration with the University of Chemistry and Technology and the Czech Technical University in Prague. Prof. Vladimír Marik and Dr. Davide Moroni were honorary chairs.

Among the topics addressed by the MUSCLE working group, this year it was decided to give special emphasis to biomedical applications. Biological signals and images pose significant challenges to multimedia understanding, which, if addressed with success, would result in advances in both biomedical science and in signal and image processing and recognition. A detailed analysis of raw biomedical data is essential if their full potential is to be exploited in bioengineering, control and robotic systems. Thanks to contributions from several related research communities, the workshop was able to cover and discuss many interesting aspects of this domain, ranging from human motion and rehabilitation to speech recognition, from polysomnography to cell image analysis. The relevance of techniques able to extract the most salient features affecting the biomedical domain from the ever increasing data deluge, blend them successfully, emerged clearly, and was discussed in the lectures delivered by the distinguished invited speakers of this edition:

- Dr. Saeid Sanei, Surrey University, UK: Man-Machine Interaction and Motion Modelling
- Dr. Joan Lasenby, University of Cambridge, UK: Applications of Dimensionality Reduction Techniques in Medical Data Analysis
- Prof. Danilo Mandic, Imperial College, UK: Computational Intelligence and Wearable Body-Sensor Networks

- Prof. Jonathan Chambers, Newcastle University, UK: Digital Signal Processing and Assistive Technologies.

41 papers were accepted for oral presentation by the programme chairs, Prof. Jonathan Chambers, Prof. Enis Cetin and Dr. Oldrich Vysata and the workshop featured a set of sessions focussing on current hot topics. A Data Fusion in Biomedicine session stressed the role of computational intelligence in putting together data from different biosensors in the diagnosis of disorders, treatment monitoring, rehabilitation and analysis of sport activities. A session was dedicated to Ambient Assisted Living (AAL) and Intelligent Tools for Disabled and Elderly People, where the focus was on how computational intelligence can be used to provide personalized guidance that can empower people and foster a healthier lifestyle. Classical biological data and signal processing was the main theme of the BIODAT session, which featured several talks on EEG processing, including microsleep and spindles analysis. Finally, a session on Big and Linked Data was included in which aspects related to smart cities, social media analytics and semantic data stream processing were addressed.

The workshop was held in the historical halls of the Strahov Monastery and the social programme included a visit to the famous library of the monastery.

The complete conference programme and videorecords of invited talks can be found at (<http://iwcim.isep.fr/>). All the accepted papers are available through IEEE Xplore.

Links:

<http://wiki.ercim.eu/wg/MUSCLE/>
<http://iwcim.isep.fr/>

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