ENB Elite Master Program Neuroengineering (MSNE)
Invited Presentation

Dr. Caroline Ling Li

Investigating into methods for multidimensional biomedical data analysis

Abstract

This talk focuses on how the signal processing and data analysis methodologies can be applied into the biomedical signal analysis in the data fusion framework. In our analysis, brain activities are measured through Electroencephalography (EEG) signals which were obtained from intensive care unit in hospital. In order to identify the brain consciousness states of those patients, various signal processing and predictive analytics methods were used. In this talk, some advanced methods are presented which overcomes the weakness of traditional methods in both time and frequency domains for EEG analysis. Moreover, an online signal nature tracking method based on collaborative adaptive filter is also presented in order to monitoring the brain states in real time. We then discuss how these methodologies can be further extended as a general framework for studying human biological functions and performances, ranging from hand gesture recognition to sport sciences.

Biography

Dr. Caroline Ling Li has been a Lecturer in the school of Computing at the University of Kent since 2011. She is also the founding coordinator of Laboratory of Brain | Cognition | Computing (BC2 Lab) of the school responsible for coordinating multidisciplinary research between Computing, Sports and local NHS. In 2015, she organized the BIH'15 conference as the local chair, which is a gathering event for three of the biggest brain initiatives (Speakers include Prof Allan Jones, Prof Karlheinz Meier, Prof David Van Essen). Before she joined the University of Kent, she had six-year research experience at Imperial College London in signal processing with a focus of analyzing body sensor data (EEG, EMG, ECG, eAR-sensor, and etc.). She started her research study within the Department of Electrical and Electronic Engineering at Imperial and then worked as a research associate in the £6 million EPSRC "ESPRIT with Pervasive Sensing" project at the Department of Computing of Imperial College. She has been focused on developing advanced signal processing methods for understanding sensor data with biomedical applications such as EEG-based biomarker for brain diseases, EMG-controlled robotics, ECG pattern extraction, and human motion analysis

Time and Venue

Talk is hosted by the Professorship for Neuroscientific System Theory (Prof. Conradt).

Friday, January 13th 2017, 14h15

Karlstr. 45, 80333 Munich, Room 1025

All talks in the MSNE Invited Speaker Series are open to students, staff, and members of the public. Attendance is free.
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