Workshop/Tutorial title: 5th Intl. Symposium on Automated Sensor Based Mobility Analysis for Disease Prevention and Treatment

Organizers

| Brian Caulfield, University College Dublin |
| Björn Eskofier, Friedrich-Alexander University Erlangen-Nürnberg (FAU) |
| Barry R. Greene, Kinesis Health Technologies |
| Jochen Klucken, University Hospital Erlangen |

Short description

Mobility defines the quality of life in health and disease. Sensor based information on gait and mobility is increasingly introduced into healthy living and disease monitoring. It supports primary prevention, diagnostic work-up and therapeutic decisions in a variety of disorders. In an ageing society, impairment of motor function is of increasing medical and economical relevance. In particular neurological, musculoskeletal and cardiovascular disorders reduce the ability to move independently and limit the autonomy of patients. Even though the disease causing mechanisms are specific for each disorder, mobility in general is limited. This makes mobility an important surrogate marker for disease severity and progress, but more importantly for therapeutic decisions and quality of life.

Contents

Currently, modern body sensor network based motion detection systems are developed that (I) assess motor function in primary prevention and throughout the course of numerous movement disorder diseases, (II) provide objective measurement for therapeutic efficacy in clinical studies, and (III) support therapeutic decisions. The symposium will focus on the current knowledge and applications of body sensor network based motion detection systems in the clinic. It will bring together technical experts and physicians specialized in movement disorders to discuss the recent advances in the field of automated mobility analysis.

CVs of the organizers

Brian Caulfield is a Professor of Physiotherapy in University College Dublin, where he also serves as a Director of the Insight Centre for Data Analytics. His research in Insight is focused on leveraging data from wearable sensors to better understand and enhance human performance in different health and sports applications.

Björn Eskofier is professor for 'Digital Support Systems in Sports and Health’ within the Heisenberg-program of the German Research Foundation (DFG). He heads the Machine Learning and Data Analytics Lab of the FAU. Currently, this lab has 25 co-workers, working in the fields of machine learning and signal analysis for wearable computing systems with a focus on sports and health care.

Barry R. Greene is CTO and co-founder of Kinesis Health Technologies. He is responsible for technical direction, research and development and regulatory affairs. He has significant expertise in healthcare technology, in particular the application of biomedical signal processing, machine learning and statistics.

Jochen Klucken is a neurologist and movement disorder specialist at the University Hospital Erlangen, Germany. As a clinician he has been developing healthcare technologies for movement disorders since 10 years and is currently translating them into digital health application.

https://bhi-bsn.embs.org/2018/