Post-doc position in physiological computing and user modeling

Place: Human Computer Interaction Group, Tallinn University, Tallinn, Estonia
Requirements: PhD degree awarded in the period of 03.03.2012 - 31.12.2017
Expression of interest deadline: February 20th, 2017
Addition info: http://goo.gl/Tp57w5

The Estonian Research Council supports researchers who have earned their doctoral degrees abroad in coming to Estonia for postdoctoral research. Tallinn University's School of Digital Technologies sponsors applications related to the measurement of peripheral physiology and brain responses, and personalisation. Expressions of interest are accepted by email send to aleksander.valjamae@tlu.ee including an academic CV and a short statement of research intentions. Post-doc application will be co-written with shortlisted candidates.

Physiology in Personalized Systems

Personalization techniques, in general, build upon user models. These models are application specific and account both for long term user properties (e.g. preferences, attitudes, personality traits, which are stable over longer time periods) and short term User properties (e.g. affective/cognitive states, which can change more rapidly). Long term properties can be acquired with existing acquisition techniques using either one time Intrusive questionnaires or slowly and unobtrusively via various modalities, e.g. ratings, browsing history, social media streams. However, these approaches fail for short term Properties, which change rapidly. Hence, personalization techniques still lack quick, responsive and unobtrusive techniques to acquire the short term user properties.

The measurement of peripheral physiology and brain responses of users can complement the traditional user feedback acquisition techniques by providing more insight into short term changes of the user. Physiological measurement can be continuously available, quantitative and relatively unobtrusive. Therefore, personalized systems can now aim for a more detailed and temporally adaptive user models that try to mimic the dynamics of the user's cognitive and affective states. In addition, the physiological data can also be used for complementing long-term user properties (e.g. personality traits). Furthermore, physiological measures can be combined with behavioural data to provide a more detailed multimodal model of the user.

Below is the list of topics that can be targeted by a potential application:
- Physiological user models for personalized systems
- Datasets with physiology information in personalized systems/human-computer interaction
- Enhancing user/learner models with physiology;
- Evaluation of physiology-based personalized services;
- Novel applications considering physiology including games, cinema, theatre, multimedia content, and social media.