

5th International Conference on

Medical Informatics & Telemedicine

August 31- 01 September, 2017 | Prague, Czech Republic

OVERVIEW OF THE TECHNICAL CHALLENGES FACED WHEN USING CONSUMER MOBILE BIOSENSORS WITHIN TELEMEDICAL APPLICATIONS

Galina Ivanova^a, Till Handel^a, Julia Schön^a, Katrin Rothmaler^a and Max Schreiber^a^aInstitute for Applied Informatics (InfAI), Germany

Over the last years, the use of consumer sensor devices in research and medical care has become increasingly popular. Due to their high acceptance and availability, these devices provide an unprecedented opportunity to collect objective biomedical and behavioral data at no cost continuously for an extended period of time. They are thus ideally suited for telemedicine applications and research under real-life conditions. However, the use of consumer devices also poses several technical challenges. These include the availability of raw sensor data for 3rd-party developers, accessing different types of software interfaces, the reliability and usability of the hardware interface between sensor and mobile device, quality of sensor data and battery-life. Furthermore, a number of data privacy and medical certification issues arise from the difference between producer-intended and actual use of the sensor device. In this poster, these challenges are addressed; evaluated and valid solutions are discussed. For the wearable sensor devices, various quality criteria are introduced based upon which a use case specific catalog of requirements may be written. As an example, we consider the three common use cases of fitness, health and medical applications.

Biography

Galina Ivanova studied Technical Cybernetics and graduated in the specialty Medical Cybernetics and Bionics. She obtained her doctorate in the field of Medical Engineering and Computer Science and worked as a scientist and lecturer at the Technical University of Ilmenau where she founded and led the "NeuroCybernetics Research Group". Subsequently she conducted research at the Humboldt-University of Berlin, at MGH/HST Martinos Center for Biomedical Imaging in Boston and at the Leibniz Institute in Göttingen. G. Ivanova took over the position as professor for Signal and Information Analysis in the Neurosciences at Humboldt-University Berlin in 2009. Since 2015 she has been leading the Group "Data Science" at the University of Leipzig and is director of the Competence Center "Biomedical Data Science" at the Institute for Applied Informatics at the same university. G. Ivanova focuses her research on the fields of biomedical signal processing, neuroimaging, multimodal data fusion as well as mobile health.

bds-pr@infai.org

Notes: