The Identity for Health and Healthcare Session

Within the past 10 years great strides have been made in the computer vision and machine learning community, as well as sensing technology for the modeling, analysis and synthesis of human verbal and nonverbal behavior (e.g., audio, video, text, thermal, physiological, etc.) for healthcare related applications. For instance, on-board smartphone sensors and wearable devices that track user activity, sleeping and eating habits, blood pressure, heart rate, skin temperature, and movement. However, compared to the advances in sensing technology, the current advances in computer vision and machine learning for verbal and nonverbal analysis (e.g., facial expression and body movement) has not yet achieved the goal of moving from the laboratory to the real-world healthcare context (e.g., medical setting). One of the challenges to achieve this goal is the lack of available archives of behavioral observations of individuals that have clinically relevant conditions (e.g., pain, autism spectrum, mental health). Well-labeled video recordings of facial expression, head and body movement, and voice of clinically relevant individuals are necessary to train multimodal classifiers. Addressing this necessity requires significant collaboration between experts from computer science, engineering, and clinical practitioners (e.g., physical therapy, pediatrics, geriatrics).

The Identity for Health and Healthcare session aim to gather multidisciplinary researchers and practitioners to discuss the current challenges that need to be addressed to ensure substantial progress in healthcare applications. We invite scientists working in related areas of computer vision and machine learning for modeling, analysis, and synthesis of verbal and nonverbal behavior, affective computing, human behavior sensing, human-robot and human-agent interaction to share their expertise and achievements in the emerging field of health informatics.

Topics of interest include, but are not limited to:
- Facial expression analysis and recognition for healthcare
- Assessment of gesture, gait, and balance for healthcare
- Mobile and remote physiological sensing for healthcare
- Multi-modal (visual, verbal, and/or physiological) fusion for healthcare
- Human-Computer Interaction systems for healthcare and assistive living
- Conversational interfaces such as digital virtual agents and social and communicative robots for healthcare
- Augmented reality interfaces for healthcare
- Sign language recognition and applications for hearing impairment
- Applications for the visually impaired
- Applications for the ageing society

- Other applications include but are not limited to: pain intensity measurement, assessment of anxiety symptoms, bipolar disorder severity assessment, assessment of depression symptoms and severity, schizophrenia, and autism screening.