

## BTU Workshop “Cognitive Health Technologies”



Workshop participants (f. l. t. r.) Matthias Wolff, Markus Huber, Ronald Römer, Andreas Schober, Stefan Lüttke, Mike Martin, Steven Boker, Ronald Böck, Timo von Örtzen and Peter beim Graben

Artificial Intelligence (AI) and Big Data become increasingly important for clinical and health sciences. Interactive Surgery, Ambient Assisted Living, Smart Home Environments and Wearable Sensing Devices supply huge amounts of rather unstructured data that require smart analysis and intelligent annotation methods that must be trustworthy and hence “explainable” to experts, patients and laymen.

One issue of particular significance is “Healthy Ageing” as outlined by the United Nations World Health Organization (WHO) in its recent proposal for the *Decade of Healthy Ageing*: “Age-friendly environments can enable older people to age safely in a place that is right for them, to be protected in humanitarian emergencies, to continue to develop personally, to be included and to contribute to their communities while retaining their autonomy, dignity and health.” To this aim, Explainable AI (XAI) in combination with Smart Homes and Wearable Sensors could leverage the functional ability of patients and the elderly in the societies of future.

In order to discuss these issues, the BTU Research Cluster of Cognitive Systems under the auspice of the Chair for Communication Engineering organized a two-day workshop “Cognitive Health Technologies”, that has taken place August 19 – 20 at BTU central campus (follow the link for the workshop program and abstracts).

During these two days, internationally renowned scientists, among them, two members of the WHO “Working Group on Metrics and Research Standards for Healthy Aging” (Steven Boker, Charlottesville and Mike Martin, Zürich), working in computer science, psychology, gerontology, and engineering

discussed theoretical and technological solutions for the analysis, annotation, interpretation and processing of health-related data and for modeling their sources through biotechnology and complex dynamical systems.

The outcomes of the inspiring workshop are promising for the further development of the BTU Health Campus and for appropriately responding to the WHO proposal. In fact, Prof. Martin from the WHO Working Group stated in his overview talk: "BTU with its designated Health Campus, bringing together engineers, data scientists and health researchers, is in an ideal position to provide unique and sustainable global leadership on explainable AI for Healthy Aging over the 2020 – 2030 WHO Decade of Healthy Aging and would be a natural member of the emerging global network of collaborating centers on Healthy Aging."