

Towards Neuroadaptive Human-Computer Interaction

Initiative: Lichtenberg - Professuren

Bewilligung: 19.08.2019

Laufzeit: 5 Jahre

Projekt-Website: <https://www.b-tu.de/fg-neuroadaptive-hci/>

The topic of the professorship is the study and development of concepts for a new mode of interaction between persons and technology. Currently, users of technology translate their thoughts, interpretations, and intentions into sequences of small, concrete commands as instructions to the machine. In doing so, the user adapts to the machine-mandated interaction logic, spending resources. This prevents an optimal division of labor between the human user and the machine and limits the efficiency of the interaction. During such technology-focused interaction, the user may fail to perceive relevant information from the environment or from the system itself. The long-term vision is a new form of technology that automatically understands the user and, based on this understanding, actively supports the interaction. One step towards realizing this vision is to enable the technology to extract information about the user state from psychophysiological measurements, to autonomously interpret this information using machine learning, and to automatically adapt itself to the so-identified needs of the user. Furthermore, over longer periods of time, these same techniques can be used by the technology to progressively generate a model of the user's intentions, situational interpretations, and general condition.

Projektbeteiligte

Prof. Dr. Thorsten O. Zander

Brandenburgische Technische Universität
Cottbus-Senftenberg
Fakultät 1
Mathematik, Informatik, Physik,
Elektro- und Informationstechnik
Cottbus

Open Access-Publikationen

Toward neuroadaptive support technologies for improving digital reading: A passive BCI-based assessment of mental workload imposed by text difficulty and presentation speed during reading
A Neuroadaptive Cognitive Model for Dealing With Uncertainty in Tracing Pilots' Cognitive State
Tracing Pilots Situation Assessment by Neuroadaptive Cognitive Modeling

