Open PhD position
“Sensor Signal Analysis for Intelligent Human-Machine-Interface”

Start: Feb 2022      Duration: 3 years

Topic
This is a project within a big joint research project “Mensch-Maschine-Schnittstelle basierend auf Quantensensoren” with many partners from Uni, Fraunhofer and industry. The aim of this project is to develop signal processing and deep learning algorithms to extract mental and movement information from humans for an intelligent human-machine-interface. Currently, the use of two kinds of sensors is planed:

• Electric and magnetic brain signals (EEG, MEG) in cooperation with Charité Hospital Berlin to better understand the human mental states, a topic for brain-computer-interface.
• Electric and magnetic muscle signals (EMG, MMG) in cooperation with Fraunhofer IPA (close to Vaihinger Campus of Uni Stuttgart) for arm activity monitoring in prosthetic control for disabled people.

Both model-based signal processing and data driven machine/deep learning algorithms will be employed. Also the recent topic of causal learning based on the causality theory may play an important role.

Requirements:
• High interest on the topic
• Profound mathematical skill
• Solid knowledge in statistical signal processing machine/deep learning
• Experience in Python programming
• Team work with other partners

In case of interest, please contact Prof. Bin Yang (bin.yang@iss.uni-stuttgart.de) by sending complete CV and transcripts of Bachelor and Master.