Dr. Sebastian Stober, Talk am 10.5.16, 14-16 Uhr, Golm, Haus 14, Raum 0.45:
Title: “Deep Feature Learning for EEG Recordings”

Abstract:
Over the last decade, so-called “deep learning” techniques have become very popular in various application domains such as computer vision, automatic speech recognition, and natural language processing where they produce state of-the-art results on various tasks. As a major advantage over traditional machine learning approaches, they no longer require handcrafted features as input but allow to learn complex hierarchical feature representations from raw data.
There is also high potential for deep learning to contribute to the progress in decoding electroencephalography (EEG) recordings. This, however, comes with some challenges because EEG data are generally only available in small quantities, they are high-dimensional with a poor signal-to-noise ratio, and there is considerable variability between individual subjects and recording sessions.
In this talk, I will introduce several techniques that specifically address these issues. I will further present experimental results from the OpenMIIR dataset demonstrating that these techniques are able to learn features that are useful for classification but also still simple enough to allow interpretation by domain experts such as cognitive neuroscientists.