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Bachelorarbeit

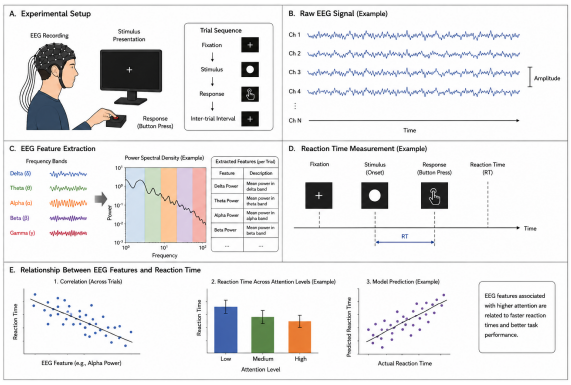
EEG-Based Attention and Reaction Time Analysis During Cognitive Tasks

Motivation

Attention level and reaction time are strongly related to human cognitive performance. During tasks such as gaming,
solving math problems, or puzzles, the brain shows different activity patterns, and the speed of response may change
depending on mental workload. This project aims to study how EEG features can reflect attention changes and how these
changes are related to reaction time.

Key Concept

The system records EEG signals while the participant performs different tasks. At the same time, visual or auditory stimuli
are presented, and the participantâ€™s reaction time is measured using a button or keyboard response. EEG features such as
alpha and beta band power are extracted and compared with reaction time values to investigate the relationship between brain
activity, attention, and task performance.



EEG

Prior knowlege

- Experiences with Python programming
- Basic knowledge of signal processing techniques
- Basic knowledge of machine learning and statistics

Research area

- Signal processing
- Neuroscience
- maschinelles Lernen

Studiengang

- [X] Elektro- und Informationstechnik
- [X] Informatik
- [X] Mechatrinik
- [X] Medizintechnik

Alignment

- [X] Method development
- [X] Research
- [X] Implementation
- [X] Modelling

Start

Immediately

Duration

3 Months

Links

Mitarbeiter

Contact person

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