Institut für Industrielle Informationstechnik
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Bachelorarbeit

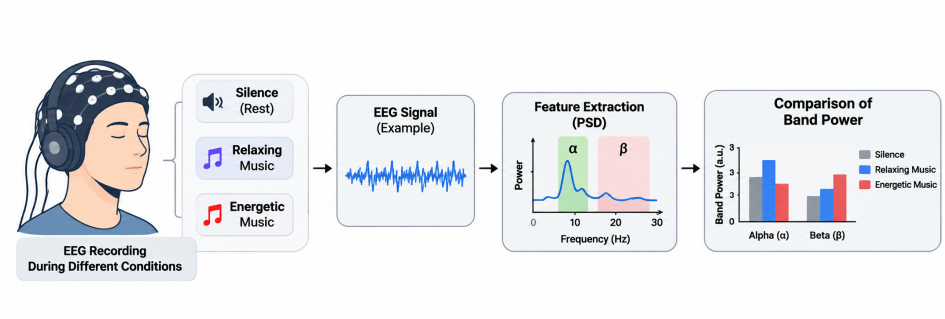
EEG-Based Analysis of Brain Activity During Listening to Music

Motivation

Music can influence brain activity, attention, and emotional states. Different types of music may produce changes in EEG frequency patterns. This project aims to investigate how brain activity differs during silence, relaxing music, and energetic music by analyzing EEG signals using digital signal processing techniques.

Key Concept

EEG signals are recorded while participants listen to different types of music and during a silent resting condition. The recorded signals are preprocessed to remove noise and artifacts. Frequency-domain features, such as alpha and beta band power, are extracted using Power Spectral Density (PSD) analysis. These features are compared across different listening conditions to investigate how auditory stimulation affects brain activity



EEG

Prior knowlege

- Basic experience with Python programming
- Basic knowledge of digital signal processing
- Fundamental understanding of EEG signals
- Basic knowledge of statistics and data analysis

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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