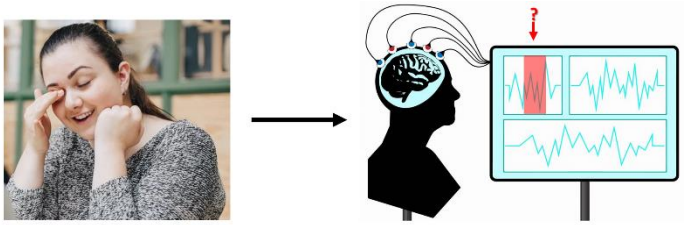
Fakultät für Mathematik und Informatik | Institut für Informatik
Neuromorphe Informationsverarbeitung

UNIVERSITÄT LEIPZIG



Images sources: https://www.sciencealert.com/
https://www.ise.ncsu.edu

An EEG biomarker for Facial Self Touch gestures?

Facial Self Touch is the act of spontaneously but unconsciously touching the face. People touch their faces up to 800 times a day. Research show that these gestures might be linked to working memory and emotions' regulatory cortical processes.

Voluntary hand and foot movements are preceded by a slowly increasing cortical potential called *Bereitschaftspotential* (readiness potential), that develops 1.5 to 1s prior to the onset of the movement. The goal of this study is to investigate the existence of comparable brain potential ahead of an FST gesture.

The EEG signal consist of 3 seconds signal recorded from 16 channels prior the occurrence of an FST. As part of this thesis, a suitable signal pre-processing step should be identified. Furthermore, methods from previous research on uncovering low voltage or hidden patterns in brain potentials should be examined and tested to determine the existence of such pattern for all subjects in the provided data, if any. In conjunction with this, analysis could also be performed by brain region.

The thesis is in cooperation with the Haptic-Research Lab of the Medical Faculty, which provides the data. The thesis may be written in German or English.

Requirements:
- ANN/ML knowledge
- Knowledge of signal processing
- MATLAB programming skills

Contact:
Sophie Adama / Prof. Dr. Martin Bogdan
Paulinum, Raum P518
adama@informatik.uni-leipzig.de

Masterarbeit

Universität Leipzig
Institut für Informatik
Abteilung Neuromorphe Informationsverarbeitung
Augustusplatz 10
04109 Leipzig

Prof. Dr. Martin Bogdan
Telefon 0341 97-32208
Telefax 0341 97-32252

bogdan@informatik.uni-leipzig.de
http://ti.informatik.uni-leipzig.de