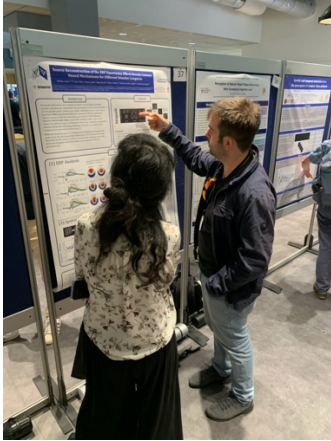


Using artificial intelligence to identify biomarkers for psychiatric disorders

Project partners
Albert-Ludwigs-Universität Freiburg, Université de Strasbourg, Karlsruher Institut für Technologie
Project duration / Awarded funding
01/11/2020 – 30/06/2023 / 42,000€
Short description of the project
Aim of the project was to identify objective physiological markers for Psychiatric disorders like schizophrenia spectrum disorder (SSD) and autism spectrum disorder (ASD). Using electroencephalogram and artificial intelligence, the partners aimed to optimize the given experimental paradigms to measure low-level visual biomarkers for SSD and ASD.
Concrete implementation of the project (What was the funding used for?) (max. 500 characters (including spaces))
<ul style="list-style-type: none"> • We hired a PhD student who collected EEG data from the cooperation partners, developed methods for data analysis, carried out the data analyses and was instrumental in writing articles. • We attended scientific conferences to present our project results to a scientific audience.
Project result(s) and continuation of collaboration (max. 500 characters (including spaces))
<p>We identified variability of neuronal activity as an EEG signature that distinguished in the available data between different psychiatric disorders and control data.</p> <p>The Department of Psychiatry and Psychotherapy at the University Medical Center Freiburg has routinely recorded EEG data from about 20,000 psychiatric patients over 20 years. Together with the project partners, we plan to apply the developed analysis methods, including methods from artificial intelligence, to this data set. For this we are on the way to write a grant proposal.</p>

Further information (links, articles, photos)



Lukas Hecker präsentiert seine Studienergebnisse auf der European Conference on Visual Perception (ECVP) in 2022 in Nijmegen, Niederlande. In dieser Studie wurde die von ihm neu entwickelte Methode, basierend auf künstlichen neuronalen Netzen, zur Quellenanalyse von EEG-Daten verwendet.

Links to project-specific publications and repositories

[https://www.frontiersin.org/journals/neuroscience/articles/10.3389/fnins.2023.1170862/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field&journalName=Frontiers in Neuroscience&id=1170862](https://www.frontiersin.org/journals/neuroscience/articles/10.3389/fnins.2023.1170862/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field&journalName=Frontiers%20in%20Neuroscience&id=1170862)

https://www.nature.com/articles/s41598-022-17304-x.epdf?sharing_token=MrlylwAalBS_P_1E1XKbidRgN0jAjWel9jnR3ZoTv0PudETZPdfdlwW2PirNI8PZONS_6RAI274a39yp6jJhGQjh_KJMrviiULSPnq4TK8Q7J8wnxAZtYBK_17an3xffcNCOAvn7J-ahYWIk13au-NwpfeVhYm7RdR9p4A0U-vFE%3D

<https://www.frontiersin.org/journals/neuroscience/articles/10.3389/fnins.2021.569918/full>

https://github.com/LukeTheHecker/flex_paper_analyses

<https://github.com/LukeTheHecker/asd-variability>