deRSE25 and SE25 Timetables



Contribution ID: 5

Type: Talk (15min + 5min)

JTrack: a digital biomarker platform for remote monitoring of daily-life behaviour in health and disease

Wednesday 26 February 2025 11:20 (20 minutes)

The use of research software in digital health is becoming increasingly vital, particularly in the remote monitoring of neurological and psychiatric conditions. My work focuses on the development and implementation of the JTrack platform, an open-source solution designed for continuous data collection from smartphones, which serves as a scalable and privacy-compliant tool for digital biomarker acquisition. This software ecosystem includes JTrack Social for sensor data collection, JTrack EMA for ecological momentary assessment, and JDash for study management, allowing for comprehensive data handling in research studies. JTrack's ability to securely collect health-related data, such as motion, social interactions, and geolocation, makes it a critical tool for digital phenotyping, particularly in the study of diseases like Parkinson's and other neurological disorders.

Our work has highlighted JTrack's potential in remote assessments, using longitudinal data collected via smartphones. For example, it was successfully integrated with DataLad, ensuring reproducibility, scalability, and data privacy in accordance with GDPR regulations. Applications of this software have already been demonstrated in the publications used by Jtrack. The use of research software like JTrack is a promising advancement in digital health, facilitating a more comprehensive understanding of patient health beyond the clinical environment.

In this talk, I will discuss the technical architecture of JTrack, its applications in ongoing research projects, and its implications for future research. Specifically, I will explore how research software enhances reproducibility, scalability, and data security in digital health studies. Moreover, the talk will highlight the lessons learned from deploying these tools in real-world studies and address the challenges and opportunities that lie ahead in developing research software for health monitoring.

By leveraging robust open-source platforms, researchers and clinicians can access real-time, actionable insights into patient health, paving the way for innovative digital therapeutics and more personalized healthcare solutions.

I want to participate in the youngRSE prize

yes

Primary author: Dr TURNA, Mehran (Institute of Neuroscience and Medicine, Brain & Behaviour (INM-7), Research Centre Jülich, Jülich)

Co-authors: Mr FISCHER, Jona M (Institute of Neuroscience and Medicine, Brain & Behaviour (INM-7), Research Centre Jülich, Jülich); Prof. DUKART, Juergen (Institute of Neuroscience and Medicine, Brain & Behaviour (INM-7), Research Centre Jülich, Jülich); Ms NARAVA, Mamaka (Institute of Neuroscience and Medicine, Brain & Behaviour (INM-7), Research Centre Jülich, Jülich)

Presenter: Dr TURNA, Mehran (Institute of Neuroscience and Medicine, Brain & Behaviour (INM-7), Research Centre Jülich, Jülich)

Session Classification: Research Software working on Medical Data

Track Classification: Data and Software Management: research data management