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"1983/2023 - 40 AÑOS DE DEMOCRACIA"

Instituto de Matemática
Aplicada del Litoral
"Dra. Eleonor Harboure"
CONICET - UNL

SEMINARIO DEL IMAL 2024

"Macías-Segovia"

Lena Salzmann

"Neurophysiological Gait Biomarkers for New Approaches in Parkinson's Disease Rehabilitation"

Resumen: Parkinson's disease (PD) is a common neurodegenerative disease caused by progressive loss of dopaminergic neurons in the basal ganglia, leading to impairment in motor function. Gait deficits often persist despite treatment, and the underlying neural mechanisms remain largely unknown. We aim to identify specific neural correlates associated with PD gait and to develop personalized gait treatments based on real-time neurofeedback. To capture the neural activity associated with gait, we are recruiting PD patients with DBS implants and healthy controls for neural activity recordings and kinematic assessment of gait. Mobile recordings of neural data are prone to artifacts that interfere with the neural oscillatory frequencies. A custom pipeline for neural data analysis is therefore required, including quality validation, data preprocessing, and feature extraction to identify distinct patterns in the data. Our goal is to identify neural patterns linked to gait abnormalities in PD, potentially reflecting individual disease phenotypes and informing future personalized treatment strategies.

Bio: Lena Salzmann started her doctoral studies at RELab (Rehabilitation Engineering Laboratory), ETH (Swiss Federal Institute of Technology), Zurich, Switzerland, in December 2021. Within the StimuLoop project, her research is focused on personalized rehabilitation of gait in patients with Parkinson's disease, using a neurofeedback loop.

Born in Vorarlberg, Austria, Lena studied Health Science and Technology at ETH and received her MSc degree with a focus on Neuroscience in 2020. Throughout her education, she was particularly interested in neural control of movement and signal processing and engaged in various research institutions such as the Lab for Neural Control of Movement at ETH and the Centre for Sensorimotor Performance in Brisbane, Australia.

In her master thesis project, Lena contributed to the development of a brain-computer interface (BCI) at RELab: she conducted a study to measure brain activity with a novel fNIRS device while recording physiological parameters, and successfully applied an algorithm to differentiate brain signals from physiological noise.

Viernes 23 de febrero de 2024, 15:30 horas

El seminario será en inglés, presencial en el SUM del IMAL y transmitida por ZOOM.

Los datos de conexión son:

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