
PhD position on the neural coupling between episodic autobiographical memory and self-consciousness

The Laboratory of Cognitive Neuroscience, directed by Olaf Blanke (<https://www.epfl.ch/labs/lnco/>), has an open position for a PhD student on the neural mechanisms coupling episodic autobiographical memory and self-consciousness using the methods of virtual reality (VR), artificial intelligence (AI) and machine learning (ML), and Functional magnetic resonance imaging (fMRI).

Project description:

Specifically, the project plans to investigate how the integration of online body-related signals not only impacts self-consciousness, but how these signals impact the encoding and retrieval of autobiographical memories. The research extends our past neuroscience research on how self-consciousness (Lenggenhager et al., Science 2007; Ionta et al., Neuron 2011; Blanke et al., Neuron 2015) impacts the brain mechanisms of spatial and episodic memory (Gauthier et al., Neuroimage 2020; Moon et al., Communications Biology 2022; Meyer et al., BioRxiv 2023). The project targets the remembering and the reliving of significant life events, and will rely on our in-house immersive 3D virtual and mixed-reality platform for experimental research both outside and inside the MRI scanner. Its innovative methodological approach will rely strongly on technological possibilities offered by generative AI and ML models for the reconstruction, adaptation and alterations of audio-visual stimuli and virtual environments.

The ideal candidate should have a Master's degree (or equivalent degree) in computer science, engineering, or in neuroscience, biology, or psychology, be strongly motivated with a keen interest in AI and immersive VR, in cognitive-systems neuroscience and neuroimaging/signal analysis. (1) Strong programming skills in VR and/or machine learning, (2) a strong neuroimaging background, especially in fMRI, or (3) previous research experience in the experimental psychology of memory, are a plus.

Working environment:

The successful applicant will join the EPFL Chair in Cognitive Neuroprosthetics which is led by Prof. Olaf Blanke and focuses on the neuroscientific study of consciousness and new diagnostics and therapeutics for patients suffering from Parkinson's disease. The Lab is based in Geneva's beautiful Campus Biotech, right next to Lake Geneva. The Ph.D. candidate will be enrolled in the EPFL Ph.D. program Neuroscience (EDNE).

Start of position:

Fall 2024

Application procedure:

Interested candidates must submit their application to the EDNE doctoral school (<https://www.epfl.ch/education/phd/edne-neuroscience/edne-how-to-apply/>)