PhD position on the experimental induction of out-of-body experiences using virtual reality and robotics

Prof. Olaf Blanke
Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

The Laboratory of Cognitive Neuroscience, directed by Olaf Blanke Lab (https://www.epfl.ch/labs/lnco/), has an open position for a PhD student on the experimental induction of so-called out-of-body experiences using immersive virtual reality (VR) and body scanning as well as robotics and vestibular stimulation.

We study out of body experiences (OBEs) because they allow important insights into the neuroscience of consciousness, especially self-consciousness and how it is based on the processing of specific bodily stimuli (Blanke et al., Nature, 2002; Ionta et al., Neuron 2011). OBEs occur in 5% of the general population and are characterized by disembodiment, elevated self-location, and an experienced viewpoint that is consistent with the change in self-location. The Blanke Lab has pioneered the use of VR in order to induce altered states of self-consciousness (including out-of-body illusions and full-body illusions) (Lenggenhager et al., Science 2007) and its neural mechanisms (Ionta et al., Neuron 2011; Blanke et al., 2015). The present PhD project will take advantage of most recent advances in VR and body scanning and integrate them with our recently installed vestibular motion platform and haptics technology to induce and understand OBEs and the related brain mechanisms of self-consciousness.

The ideal candidate should have a Master's degree (or an equivalent degree) in neuroscience, psychology, or engineering (or neuroscience, biology, or computer science) and be a strongly motivated person with a keen interest in cognitive-systems neuroscience. (1) Previous research experience in the experimental psychology of multisensory perception (psychophysics) and/or (2) VR or vestibular processing are a plus.

The PhD candidate will be enrolled in the EPFL PhD program Neuroscience (next deadline: mid-November 2019; see http://phd.epfl.ch/neuroscience-openings).