

Post-doc position at EPFL, Switzerland.

Virtual Spaces – Cognitive and digital processes in the perception and realization of architecture

Virtual Reality for embodiment in Architecture and Cognitive Neuroscience

Recent advances in cognitive neuroscience revealed the importance of the multisensory integration for body perception and self-consciousness as well as the feeling of presence through experiments in different immersive virtual environments. Such environments allow experimental perturbation of many body- and self-related perceptual and cognitive processes such as vection, changes in the body representation, changes of the first-person perspective, and several other sensorimotor activities. In the present research project that is supported by the Swiss National Science Foundation (V-SPACE; SNF N° 100013_130358) we plan to explore the relevance of these processes for architecture and environmental design within the framework of immersive virtual reality technology.

The relevance of relating architecture to the bodily self as studied in cognitive neuroscience may allow the development and injection of novel and experimental notions of how the bodily self interacts with and modifies the perception of the architectonic environment through design and inhabitation processes. The aim of this research is to elaborate such potential links between cognitive neuroscience and architecture and to fill this currently existing vacuum with theoretical work and with empirical data obtained in immersive virtual reality.

The ideal candidate is a post-doctoral researcher in virtual reality and will work with three partners; the laboratory of cognitive neuroscience directed by Prof. Olaf Blanke (<http://lnco.epfl.ch>), Ronan Boulic research group from the laboratory of virtual reality (<http://vrlab.epfl.ch>) and the workshop ALICE (<http://alice.epfl.ch>) of EPFL's school of architecture (ENAC). The proposed work will be the development of software for the simulation platform used to perform cognitive experiments (immersion in mini-CAVE and head mounted displays, visualization of architectural elements) and will lead the candidate, in collaboration with experimental architects and cognitive scientists, to investigate the cognitive basis of immersion and embodiment and to confront theories of presence with concepts from architecture and neuroscience.

Candidate profile: PhD in Virtual Reality / computer graphics / HCI, familiar with immersion technologies (HMD, CAVE), interest for fundamental questions on Presence.

Duration: 12 months

Start: January or February 2011

Location: Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland.

Supervision: Prof. O. Blanke, Laboratory of Cognitive Neuroscience, Dr. R. Boulic, Virtual Reality Laboratory.

Language: English and French are the working languages.

Application: send a CV with list of publications and 2 letters of recommendation to olaf.blanke@epfl.ch and ronan.boulic@epfl.ch.