



Thesis Project Form

Title (tentative): Study body perception under different environmental conditions

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Description

Motivation and application domain

During daily life activities, we use our body to present ourselves, perceive the environment, and interact with it. Everything is possible thanks to the brain: a complex multimodal system able to integrate information from vision, touch, proprioception and vestibular systems. These representations are interwoven with cognition and the motor control systems, enabling people to successfully act on their surroundings. An injury or a perturbation could modify our body representation, leading to different strategies to interact with the world.

General objectives and main activities

The general goal of the study is to investigate the perception of verticality in different environmental conditions. In particular to investigate the subjective visual vertical (SVV), a diagnostic procedure to evaluate a subject's sense of verticality, by using virtual reality. This will allow the introduction of new assessment techniques that could be used in clinical evaluation.

The main activities will consist in:

- Developing new SVV tasks by using an immersive virtual reality environment. The SVV tasks must be easy, fast to perform and need to adapt to different situations of perturbations.
- Test new SVV tasks with subjects of different age.

Training Objectives (technical/analytical tools, experimental methodologies)

1. Background literature analysis
2. Definition of the Experimental set-up
3. Development of the pipeline for SVV analysis and characterization
4. Data collection and analysis

Place(s) where the thesis work will be carried out: DIBRIS, via all'Opera Pia 13

Additional information

Maximum number of students: 1