



Thesis Project Form

Title (tentative): Development of a Virtual Reality Electromyography simulator

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Description

Motivation and application domain

Simulations of systems for collecting physiological signals are useful in many contexts: they allow to train healthcare providers on their use without employing real instruments; furthermore, they replicate the recording of uncommon pathological signs, being valuable educational tools

General objectives and main activities

The goal of this project is to adapt an electromyography (EMG) simulator, designed at Medical Engineering lab of the University of Navarra, Spain, to the virtual environment.

After analyzing the main features of the EMG simulator, the students will be required to replicate its functioning in the virtual environment (e.g. Unity, Unreal), to create a virtual replica. In addition, a Mixed Reality solution combining the physical and virtual simulators can be designed and developed.

Training Objectives (technical/analytical tools, experimental methodologies)

- Ability to use 3D tools (Unity 3D, Blender)
- VR programming
- Basis of Electronics

Place(s) where the thesis work will be carried out: Laboratorio de Ingenier a M dica, University of Navarra

Additional information

Maximum number of students: 1