

Proposal of MSc project

1. Title

Online Robot Simulation and End-User Programming Environment

2. Brief description of the project

Simulators allow the representation of key characteristics; behaviours or functions of a particular (physical or abstract) system or process; and have been used as a tool for learning and creativity. Particularly, robot simulators are used in teaching settings to test knowledge in a more accessible way for those with no access to a physical device; or as a previous step before deploying the code to the physical robot. Some examples are Nao Robot Simulator or Lego Mindstorms simulators.

This project seeks to create a 3d virtual simulator for a small desktop robot. In doing so, the simulator should represent the robot and its behaviours; along with the possibility of create small snippets of code that could be tested on a physical robot.

3. Deliverables

- Build a web-based simulator for a desktop robot using 3d objects in a virtual world, applying knowledge of software engineering and virtual reality.
- Full documentation including technical documentation and user manuals.

4. Technical skills and knowledge the Postgraduate student is required to have

- Good programming skills in C# and C++
- Knowledge of programming on Unity3D (not required but desirable)

5. MSc courses related

- MSc in Advanced Web Engineering
- MSc in Advanced Computer Science
- MSc Computer Games
- MSc Artificial Intelligence
- MSc Computer Engineering