# Metaland Elearning Platform

I. Kissami[1], F. Kalloubi[2], N. Ouhaddou[1], N. Hamid[1]

[1] Mohammed VI Polytechnic University

[2] Chouaib Doukkali University

## Information

- Supervisors : Imad Kissami, Fahd Kalloubi.

- Tutors : Nouredine Ouhaddou, Noureddine Hamid.

- Host laboratory : MSDA Al-Khwarizmi / Simlab HPC Cluster

- Host University : Mohammed VI Polytechnic University, Lot 660, Hay Moulay Rachid, Benguerir 43150, Morocco

- Number of Interns: 3 3D designers, 3 3D graphic artist.

- Internship Duration: 4 to 6 months

- Compensation: TBD

- Contact mail: Simlab-Recruite@um6p.onmicrosoft.com

## General Context

Located in the heart of the future Mohammed VI Green City in Ben Guerir, the Mohammed VI Polytechnic University (UM6P), an institution of higher education with an international vocation, is committed to an educational system based on the highest standards in terms of teaching. and research in crucial areas for the sustainable economic development of Morocco and more broadly of Africa.

The MSDA group is a research center of the UM6P focused on the theme of mathematical modelling, numerical simulation and artificial intelligence. The group conducts several research projects in conjunction with its industrial partners in Morocco, and a network of international academic partners.

Online learning has experienced tremendous success in the last few years. Moreover, recently, to improve learners experience, new mediums such as metaverse and virtual worlds (VWs) platforms are emerging in order to deliver more realistic experiences and user-friendly environments. It is in this perspective that our project fits, which aims to develop a platform that provides assistive tools for constructing an educational experience in a virtual world. Such platform provides users with the ability to build virtual situations that can simulate real-life experiences through different academic activities. In fact, this project is meant to deliver a collaborative virtual environments (CVE) by offering an educational/academic environment to students in order to sharpen their knowledge and soft skills and also to prepare them for the corporate world. To achieve that, and in order to deliver such immersive environment, a couple of technologies, tools

and technological stacks have to be involved ranging from 3D extended reality design tools to more advanced techniques such as conversational AI, Blockchain/IoT and computer vision.

## 3D Designer

Simlab is searching for a talented 3D Designer intern to join our team and help us produce 3D models. You will be a member of the design team and work closely with the 3D modeling team.

**What You'll Do**

- Design, build, and innovate new 3D printing techniques.

- Work closely with 3D character artist on bringing 3D characters to life.

- Tackle complex and open-ended problems across multiple engineering disciplines.

- Interacting with the wider USD community

- Help set up pipeline tools and evaluate new animation and visual effects pipelines.

- Help create Graphic User Interfaces for new and existing tools.

**Required Skills**

- Basic Python scripting using Digital Content Creation software like Autodesk Maya.

- Strong interest or previous experience in scene description.

- Experience working as part of a development team.

- Universal Scene Description(USD-PIXAR).

- Experience using USD extension for Maya.

- Be proactive, and be comfortable with working in an Agile environment.

**Bonus Skills**

- Basic game development using Unity C# or Unreal Blueprints.

- Knowledge of 3D development and integrated game physic.

- Good troubleshooting skills.

## 3D graphic developer

Simlab is searching for a talented 3D graphic Artist intern to join our team and help us produce 3D models. You will be a member of the design team and work closely with the 3D modeling team.

**What You'll Do**

- Collaborating with Animators and other artists and attending meetings to discuss ongoing projects.

- Understanding the project requirements and conceptualizing creative ideas.

- Using 3D modeling, texture, mapping, and other techniques to create graphics, visual effects, and animations.

- Receiving feedback from directors, animators, designers, and clients, and editing your creations based on the comments received.

- Troubleshooting any problems that arise during work on a project.

- Meeting with clients, Designers, and Directors to discuss and review projects and deadlines.

**Required Skills**

- Experience with C#

- Knowledge of scripting, animation, session management, and textures

- Unity 3D (Unity Game Engine, Unity ML agents, Unity face recognition, Speech recognition, Autonomous NPC movement)

- Building WebGL application using Unity

- Excellent creativity and artistic skills

- Good communication and teamwork skills.

**Bonus Skills**

- Serious games with Unity

- Experience with console and mobile game development

- Knowledge of 3D development and integrated game physic

- Good troubleshooting skills