Unity3D for XR Minerva Course Syllabus

Course Goal

Latest advancements in real-time 3D technologies and spatial computing platforms (XR) make the creation of "Immersive Experiences" accessible than ever. The study of human intelligence and behaviour relies on what scenarios and conditions researchers can create for to their experiments. Immersive Experiences in research allows researchers full control over their experiments: they can measure all of the subject's behaviour by accurately tracking every interaction it makes with the world, while having 100% control over the world it is immersed in.

This 21 hours course aims to provide students with a basic understanding of how to build and design immersive interactive experiences that are intuitive and self-explanatory.

Program

Day 1 - August 14 10:00 - 17:00

Introduction - Real-Time Engines Basics
How video-games are made, brief history of VR, and what's special about the spatial medium.

Assignment - Roll A Ball
Get to know the basics of Unity Engine and C# scripting with the official most basic Unity tutorial - Roll A Ball

Setup the XR Rig
Convert the project from the screen-based medium to the spatial medium by setting up the XR rig in the project.

Day 2 - August 15 10:00 - 17:00

VR Camera - Scale & Play Area
Learn about the VR camera, feel how significant is the sense of scale in immersive experiences and learn how to adjust your experience to the available real-world play area.

Hand Representation
Learn about the hand representation concept and create a very simple hand representation for your player.

VR Button

Create your first and most basic VR button.

New Ball Controller
Create a new controller that will replace the keyboard with hands for player input.

Day 3 - August 16 10:00 - 17:00

How newcomers Experience VR
Learn the fundamentals of how to welcome first-time-VR people to your immersive experiences without overwhelming them.

Create a Tutorial
Every immersive experience should begin with a tutorial, and yours is no exception! ****

General

1. **Length:** 21 hours.
2. **Location:** TAUXR Center.
3. **Requirements:**
    1. Basic programming skills (preferably C#/Java).
    2. A computer [that can run the Unity Engine](#) and a mouse with a scroll wheel *(*note that an Apple "magic mouse" will not work).*
    3. Unity 2021.3.XX LTS installed (the 2021 Unity version that is marked as LTS).
    4. Visual studio community / VS Code installed working with Autocomplete (try to type `tran` and see it suggests you to complete to `transform`).

Contact

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