Sergi Tortosa I Ortiz-Villajos

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Date of birth	01/09/1995

Software developer with three years of experience in variety of development of 3D applications. Organized, methodical and performance aware which results in solid coding and trustworthy software.

Languages

English B2 Cambridge
Spanish Native
Catalan Native

Technologies

C#, C++, Python, JS
OpenGL, GLSL, HLSL
GIT

Work Experience

XR/VR/AR DEVELOPER – Visyon 360 - Barcelona - January 18 - nowadays

Software developer as a part of a Unity developers team where my main tasks are solving performance problems, developing new features, maintaining and refactoring the existing ones to provide better scalability and stability.

Notable accomplishments:

- Created an Input System for VR devices (gaze and controller based) using Unity EventSystem to allow us using native unity UI and remove unnecessary colliders and unify different platforms.
- Created a graph based approach based on json serialization to handle speech navigation through menus and options. It allowed us to reduce the couple between voice commands and our code.
- Profiling and optimization of the current used framework to improve notability the performance on mobile devices.
- Graphic Programming tasks such as realtime GPU foam and VR stereo planar reflections.

XR/VR/AR DEVELOPER – Soft For You S.L - Barcelona - October 16 - January 18

Only Unity developer where my main tasks were from designing to developing different applications and proof of concept.

Notable accomplishments:

- Created a framework that allowed us to store textured meshes from Hololens to an intermediate server and later recover it from a client which could interact in real time with he Hololens with environment information. It was part of my final degree project.
- Integrally involved at Imagine Silicon Valley 17 exploring point cloud data streaming and reproduction. The data was extracted from a Kineckt and reproduced or streamed to one or multiple Hololens.
- Developed with python and opencv a thermal image delta extractor to allow users see if there are significant differences between images of the same place taken at different dates.
- Developed an editor for manual marking objects and their trajectory on a video to use the data to reproduce a pick game over it.

Skills

Technical Skills

- Working with and developing APIs (.net core).
- Relational and non relational databases (Oracle, MySQL, Postgres, Firebase)
- UML and software architecture.
- Statistics collection and visualization (Tableau)
- QT applications development.

Unity3D Skills

- Mobile VR (Daydream, Cardboard, Oculus).
- XR (Microsoft Hololens, Daqri, ARKit, ARCore).
- Editor tools development.
- Profiling applications (Unity Profiler - Oculus tools).
- Debugging graphics (RenderDoc-Unity Frame Debugger).

Education

MIRI - COMPUTER GRAPHICS AND VIRTUAL REALITY – FACULTAT D'INFORMÀTICA DE BARCELONA (UPC) – 2017 – 2019

COMPUTER SCIENCE DEGREE (SOFTWARE ENGINEERING) – FACULTAT D'INFORMÀTICA DE BARCELONA (UPC) – 2013 – 2017

INTRODUCTION TO GAME DEVELOPMENT WITH UNITY 3D – FACULTAT D'INFORMÀTICA DE BARCELONA (UPC) - 2015

Projects

Personal

Skinnable: Unity tool that aims to provide a flexible and extensible way to costume and change the appearance of your application.

SkARscanner: Application developed in a four members team for HackUPC 2017. In this application we explored the possibility of flight planning in a collaborative environment between AR (ARKit) and XR (Hololens).

University

Nurse Training Designer: Visual programming tool for designing VR Nurse training sessions. Built on top of Unity using a Node editor with an associated context. Video of a session generated with the tool.

CGA: Shape grammar interpreter for the master course A3DM which allows the user to build simple buildings with shape grammar.

OpenGL viewers: During different courses using QT and OpenGL I implemented several graphic programming algorithms: SSAO, PBR, Scalable Rendering algorithms.

Holographic Shared Experiences (Final degree project) - Video.