

# Tim Turcich

Software development and design expertise with interactive human computer conditions involving AR/VR application technologies.

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## EXPERIENCE

### **Bohemia Interactive Simulations, Orlando FL — Sr. AR/VR Engineer**

Oct 2018- PRESENT

Principal AR/VR Software engineer where I Integrate technologies such as Visual Systems, HMDs, Tracking, Calibration and Mixed Reality Rendering Techniques with a modern C++ D3D11 engine for real time whole earth simulation and rendering. Primarily focused on mixed reality training applications connecting virtual and real interfaces.

Interactive training includes flight, operational, safety and weapons systems.

HMD Hardware integrated includes support for the near complete spectrum of PC tethered AR/VR headsets today. Commercial VR HMDs via SteamVR, Enterprise Solutions via Varjo Native Mixed Reality, VRengineers Native Mixed Reality, JVC Enterprise Augmented Reality.

### **Full Sail University, Orlando FL — AR/VR Lab Specialist**

Jan 2017 - Nov 2018

Developed/Taught Curriculum and Software Technologies for Simulation and Visualization Degree Program across multiple courses. Rendering for Mixing Camera and Virtual Images, Integrating different tracking methods Together. Hardware Developed with includes SteamVR HMDs, Hololens, Magic Leap, Nokia OZO Stereo 360 and ZED Camera.

### **Full Sail University, Orlando FL — 3D Graphics Programming Course Management and Instructor**

Nov 2014 - Dec 2016

Developed/Taught curriculum and software for building theory ground up software rasterizers and D3D11 API principles for building 3D engines or scenes. Taught modern graphics techniques related to representing lighting and shadows with 3D Graphics Hardware Pipelines.

## SKILLS & KNOWLEDGE

Augmented and Virtual Reality, Real Time Software Interactivity, Graphics Pipeline & Programs including general GPU, Data Structures and Memory Management, Multi-Threaded Programming, Artificial Intelligence, Collision Detection & Physics, Linear Algebra, Scripting Systems, Game Network Systems, Game Engine & Interactive Media Software Architectures

## SOFTWARE TOOLS

Microsoft Visual Studio(10+yr), Eclipse, Autodesk Maya, Notepad++, Microsoft Project and Office, Version Control Software (SVN, Mercurial, GIT, Perforce), Unity Game Engine(AR/VR 2yr+)

## PROGRAMMING LANGUAGES

Proficient with C, C++(10+yr), C#, Java, HLSL, GLSL

Familiar with x86 & ARM Assembly, Lua, Nvidia CG/CUDA, XML, UML

## **Full Sail University, Orlando FL— *Game Networking Course Management & Instructor***

Nov 2012 - Nov 2014

Developed/Taught curriculum and software for real time networked game technology. Includes blocking, non-blocking and multithreaded network architectures, network debugging and development environments, and physics based predictive systems.

## **Full Sail University, Orlando FL— *Game Development Lab Specialist and Course Instructor***

Jul 2009 - Nov 2012

Taught computer programming and game development techniques regarding Artificial Intelligence, Machine Architecture, Operating Systems, Software Optimization, Software Architecture, Game Networking, Graphics APIs, Game Engine Architecture and other game development disciplines. Specialized in Artificial Intelligence including Navigation Meshes and Path Planning Techniques, Neural Networks, Genetic Algorithms, Fuzzy Logic, Decision Trees, Minimax.

## **APIS & LIBRARIES & FRAMEWORKS & MIDDLEWARES**

Proficient with Win32, D3D 9-11, OpenGL & ES, AR/VR APIs (SteamVR, Varjo, VRGineers), Network Sockets

Familiar with D3D12/Vulkan, NvAPI, x86 SIMD, Maya API & FBX SDK, PhysX/Bullet, Recast, Fmod, Boost, C++0x11, Kinect & ZED SDK.

## **EDUCATION**

### **Full Sail University, Orlando FL — *Game Development Computer Science BS***

Feb 2007 - Feb 2009

### **SUNY Adirondack, Queensbury NY— *Mathematics AS***

Sep 2004 - Dec 2006

## **OTHER PROJECTS**

I/ITSEC 2019 Iron Dev Competition, <https://youtu.be/Mk- NuLBE18>

Some other general projects can also be found at [hyperreality.dev](http://hyperreality.dev)

## **REFERENCES**

Mr. Cory McCarville-Schuelths: Sr. Software Engineer Bohemia Interactive Simulations: 407.513.2679

Mr. Dan Mapes: AR/VR Course Director Full Sail University: 407.415.9045

Mr. Wei Lee: US Air Force: 518.506.0605