

WORK EXPERIENCE

Spatial Computing Lab @ Qualcomm Institute

March 2023 – Present

Application Programmer II, [Cyber-Archeology Warehouse](#)

Remote/La Jolla, CA

- Implemented key requirements of Core Unreal Project by adopting the VR Expansion Template with Dragon IK to support Networked Metahumans with Hand Tracking Capabilities
- Showcased the Cyber-Archeology Warehouse live for Siggraph Asia 2023, Super Speed Connectivity for Digital Twins: Real-time streaming of high fidelity content across continents within immersive environments
- Developed derivatives of the Core Unreal Project for Cyber-Archeology Warehouse, Cognitive City Twins, Climate Change Games, nDisplay CAVE, Solar Weather, NanoVerse, Chemistry Simulation Dashboard
- Researched Downloadable Content and Modding Development kit for User Generated Content to encourage a self-sustaining community and platform for Cyber-Archeology Research and Education
- Improved application stability and efficiency through profiling, debugging, and automated packaged releases
- Mentored for the Academic Internship Program and Research Experiences for Undergraduates

Arthur C. Clarke Center for Human Imagination @ Qualcomm Institute

Oct 2020 – March 2023

Application Programmer I - II, [ARNO: Networked XR Development System](#)

Remote/La Jolla, CA

- Implemented Multiplayer across Desktop/AR/VR/Web by adopting CollabViewer and HololensViewer templates
- Integrated 7 Buildings for a UCSD Campus digital twin using the Revit Datasmith Dataprep workflow
- Adopted foundational geospatial support with the ArcGIS Maps SDK and Cesium For Unreal plugins
- Prototyped new features with C++ and Blueprints using REST API to assist in data visualization
- Developed and maintained software repositories across Windows/Linux for Desktop, VR, and Hololens 2
- Automated Build and Release Gitlab CI/CD Integration
- Deployed Pixel Streaming of Application on the National Research Platform's Academic Kubernetes Cluster
- Integrated Online Subsystem to support Authentication, Sessions, and Voice Chat via Epic Online Services (EOS) by using the Redpoint Games EOS Online Subsystem Plugin
- Integrated custom avatars with online services and user cloud profiles using the ReadyPlayerMe API
- Orchestrated Scalable GameServers over Kubernetes using Agones Custom Resource Definitions

PROJECTS

Engineers for Exploration @ CSE UCSD

June 2019 – Sept 2021

Project Lead, [Maya Archeology](#)

Remote/La Jolla, CA

- Researched digital methods of documentation, visualization, and distribution in Archeology with game engines
- Participated in Expeditions to the archeological site El Zotz, Guatemala for field tests of scanning technologies
- Post-Processed point clouds and mesh reconstructions with registration and digital sculpting software
- Optimized environmental assets to target standalone first generation mobile virtual reality devices
- Documented retopology, uv unwrapping, and texture reprojection techniques for future expeditions
- Scripted new environments into the Maya Archeology VR Unity application

Steam Community Developer

June 2015 – Jan 2018

3D Generalist, [Zombie Panic: Source](#) and [Contagion](#)

Remote

- Collaborated with level designers for Drama Theater, Arctic Rural, and Airport Terminal Environments (ZP:S)
- Collaborated with programmers to create a universal animation rig for all characters (ZP:S)
- Designed and Published a large urban map based in West Hollywood, CA to the Steam Workshop (Contagion)

SKILLS

Game Engines: Unreal Engine, Unity, Source

2D/3D Suites: 3ds Max, ZBrush, RealityCapture, Register 360, Metashape, Substance, Photoshop, Lightroom

Software: C++, C#, Python, Javascript, Kubernetes, Docker, Helm, Bash, Git, Gitlab CI/CD

EDUCATION

University of California, San Diego

June 2021

Bachelor of Science, Major in Computer Science

La Jolla, CA

Coursework: Software Engineering, Computer Graphics/Animation, Augmented/Virtual Reality, Machine Learning, Operating Systems, Networking, Security