

PROFESSIONAL EXPERIENCE

GPU Engineer

2021-present

Verizon

- Supported development of the large volumetric capture stage
- Standardized file format for multi-camera calibration and provided a reader/writer library
- Set up Jenkins scripted pipeline templates for use across any project
- Provided feedback regarding the team workflow and project planning which resulted in more tangible weekly results and far greater project stability

Algorithm Developer

2019-2021

Toyon Research Corporation

- Analyze existing computer vision code for bottlenecks using nvprof, Nvidia NSight, and VS Performance Profiler
- Implement parallelized algorithms in CUDA to run on the GPU
- Package software for delivery to client using Docker and CPack
- Maintain and update CI scripts and configuration files

XR Software Developer

2018-2019

Rowan Virtual Reality Lab

- Wrote code to consume REST API in C#
- Handled compatibility issues for multiple devices during development
- Wrote code for custom world-space GUI element interaction for Oculus Go

Software Engineering Intern

Summer 2017 & 2018

OPEX Corporation

- Added graphics features to dialogs and worked to fix graphic bugs using MFC libraries in C++
- Worked on build scripts to be used with Jenkins and made changes to better integrate Plastic SCM into Jenkins
- 2D graphic rendering optimization; Increased performance by 80% using Visual Studio Performance Profiler

SKILLS

C++ • CUDA • Rust • C# • F# • Python • Javascript • Flask • SQL • NGINX • React • Docker • Docker-Compose • Plastic SCM • Git
Continuous Integration • Machine Learning • CMake • Bash • Linux • OpenGL • Verilog • Embedded Systems • Unity3D • VR • FMOD

COMMUNITY OUTREACH

Exercism.io

Ongoing

- Mentor for C++ and F# language tracks
- Occasional open-source contributor

PROJECTS & RESEARCH (All projects are available on GitHub)

Url Shortener Web App

Fall 2020

Personal Project

This was just a small project for practicing some backend web skills using Python, Flask, NGINX, SQLite, React, and Docker. The homepage is a simple form where you can input a long url. When you submit the form, the long url is assigned a short tag which is saved in a database alongside the original url. Afterwards, /short/<tag> will redirect to the long url. The concept is similar to Bitly or TinyURL. The entire project is set up to run with docker-compose, so everything should be very portable, scalable, and easy to use.

VR Iron Man Simulator in Unity3D

Fall 2018

Introduction to Virtual Reality

For my final project, I created a small VR game for the Oculus Rift in Unity3D. In this game, the player takes on the role of an *Iron Man*-esque hero. The player is able to fly and shoot lasers and missiles to defeat waves of enemy aircraft. Notable accomplishments on this project include writing the aircraft AI pathfinding algorithm implemented as a PID steering system, writing player input handling, writing missile behavior, and implementing 3D sound using FMOD. I also modeled and textured the player's hands, the missiles, and the player's home base.

Playground Engine: A C++ and OpenGL Game Engine

Ongoing

Personal Project

This small game engine was born from scraps of code I wrote while learning OpenGL. Eventually, I gathered together some of the pieces into useful abstractions such as Models, Shaders, Cameras, Meshes, and SceneNodes for building a scene graph. The project uses CMake for cross platform building, CTest for testing, Travis CI for automated builds and testing, and Codecov for test metrics.

EDUCATION

BS Electrical & Computer Engineering

2015-2019

Rowan University, GPA: 3.685

Institute of Electrical and Electronics Engineers (IEEE), Rowan University Student Branch

2015-2019

- 2015 Rowan Sumo Robotics Champion

Rowan Scholars Program Scholarship Recipient

2015-2019