Joseph Ryan

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P1n3appl3

Work

Fuchsia - Rust Toolchain Intern **Summer 2020**

UT Austin - Undergraduate Research Assistant **Spring 2020**

UT Austin - Teaching Assistant for Introductory Computing Class **Fall 2019**

- Worked closely with the instructor to write assessments and problem sets
- Taught students in office hours, discussion sections, and remedial sessions

Google - Software Engineering Intern **Summer 2019**

- Worked on an integration testing framework for distributed systems
- Wrote a library to inspect the dependency graph of components (servers) and services (RPCs)
- Provided support to several engineers using the library to build other tools

Vectra AI - Software Engineering Intern **Summer 2018**

- Developed an extensible automated system to run security and compliance scanners
- Wrote a Jenkins pipeline to apply this tool to the company's nightly builds
- Designed and implemented a tool for managing virtual machines which simplified developer workflow and improved automated testing and builds

STEM Summer Camp - Instructor **Summer 2016 & 2017**

- Mentored elementary through high school students during week-long classes
- Taught several subjects including microcontrollers, robotics, programming fundamentals, and basic digital circuits
- Revised existing course materials and wrote curricula for two new courses

Education

The University of Texas at Austin - Cockrell School of Engineering **Austin TX**
BS in Electrical and Computer Engineering - GPA: 3.4 *May 2021*

Activities

Robotics and Automation Society - Leader/Committee Head **2017 – 2020**

- Participated in several robotics competitions: IGVC, PacBot, and Micromouse
- Mentored new members on the basics of robotics in our yearly onboarding program

FIRST Robotics - Team Lead/Head Programmer **2015 – 2017**

- Directed a team of developers on long term software projects as an elected board member

Projects

Nand to Tetris **HDL, ASM, Jack, Python**

- Audited a course on computer architecture and compiler fundamentals
- Built a CPU simulator, compiler, VM backend, and assembler for a minimal architecture

Unbiased Path Tracing Renderer **Rust**

- Implemented a toy raytracer from the ground up and added features like texture mapping, model loading, and HDR support
- Performed profile directed optimization including algorithmic improvements, parallelization, and SIMD acceleration of floating point vector operations