Joseph Ryan

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Education

The University of Texas at Austin - Cockrell School of Engineering   **Austin TX**
BS in Electrical and Computer Engineering - GPA: 3.48   *May 2021*

Experience

Vectra AI - Software Engineering Intern   *Summer 2018*
- Developed an extensible automation framework to run security hardening and compliance scanners
- Wrote a Jenkins pipeline to apply this tool to Vectra's builds nightly
- Collaborated with security team to resolve vulnerabilities and bugs unveiled by scans
- Designed and implemented a tool for managing virtual machines which simplified developer workflow and improved automated testing and builds

STEM Summer Camp - Teacher and Counselor   *Summer 2017*
- Mentored elementary through high school students during week long camp sessions
- Taught classes on microcontrollers, robotics, app development, circuits, and programming fundamentals
- Revised existing course material and wrote curricula for 2 new courses

FIRST Robotics - Team Lead/Head Programmer   *Fall 2015–Spring 2017*
- Directed 10 developers on multiple software projects
- Managed long term projects as an elected board member
- Adopted version control, continuous integration, and unit testing best practices

Projects

The Elements of Computing Systems   **HDL, ASM, Jack, Python**
- Audited an online course on computer architecture and compilers
- Built a CPU simulator, OS, compiler, VM translator, and assembler for a minimal architecture
- Extended the above tools beyond the scope of the course by adding new language features

Genetically Evolving Neural Networks   **C++, Python**
- Implemented a machine learning solution for real-time, continuous controllers
- Used a combination of neural networks and genetic algorithms for competitive training
- Successfully learned to balance a pole and drive a car on a track in 2D simulations

PineapplePad   **C++, ARM Assembly**
- Designed and developed a microcontroller based video game with a partner
- Voted "Best Design" in embedded systems class-wide competition

PacBot   **C++, Python**
- Designed a fully autonomous, omnidirectional robot with size and budget constraints with a 10 person team
- Wrote custom drivers for high encoders and distance sensors to accurately track the robot's position

Technical Skills

	Proficient in:	**Familiar with:**
Languages:	Python, C, C++, Bash	ARM Assembly, Java, Ruby, Rust
Technologies:	Linux, Git, Markdown, Jenkins	Make, Docker, Protobuf, ROS, LaTeX