Andrew Goetz

andrewgoetz2@gmail.com — 347-283-8228 — Flushing, NY

Work Experience

Embedded Software Engineer — *Feb 2023 – Present*

Tel-Instrument Electronics Corporation | East Rutherford, NJ

- Developing C++ programs to test ATCRBS, Mode S, TCAS, Mode 5, & other avionics technologies
- Porting nearly 250,000 lines of object oriented C++ code to QNX (a POSIX compliant Real-Time OS) for the US Navy
- Adding Mode 5 features to a C++17, embedded Linux codebase
  - Using LVGL, boost, lambda expressions, move semantics, CMake, git submodules & git rebase
- Supporting firmware & electrical engineers in diagnosing hardware, FPGA, & interrupt bugs
  - Utilizing oscilloscopes to probe interrupts, GPIO lines, PC/104 interface; interfacing with 8259 interrupt controller
- Collaborating with senior RF engineers on alignment procedures to ensure accurate power & frequency readings
  - Monitoring and testing RF signals using spectrum analyzers, pulse generators, oscilloscopes, etc.
- Building QNX system images with ssh key generation, integrity checking using SHA256 hashing, sftp chroot, etc.
- Releasing periodic software versions for US navy & internal use through a Python build script

Information Technology Intern — *Sep 2022 – Dec 2022*

SureScan Corporation | Binghamton, NY

- Maintained Linux servers for use in baggage screening systems deployed internationally
- Independently composed technical documentation detailing the procedures required to service Linux servers
- Increased RMA system throughput by diagnosing & fixing issues with dozens of servers & laptops

Software Engineering Intern — *May 2022 – July 2022*

Relaymile | Alameda, CA (Remote)

- Utilized Flask REST API & Python to allow the frontend access to databases in the backend with SQLAlchemy
- Worked with frontend developers at daily sprint meetings to implement messaging features using Socket.IO

Education

Binghamton University, State University of New York — *Aug 2019 – Dec 2022*

Thomas J. Watson College of Engineering and Applied Science, *Bachelor of Science in* ***Computer Science***
Overall GPA: 3.78 | ***Major GPA:*** 3.79 | ***Dean's List:*** Fall 2019 – Fall 2022

Relevant coursework: Software Engineering, Design Patterns, Programming Languages, Computer Networks, Algorithms, Data Structures, Systems Programming, Operating Systems, Automata Theory, Linear Algebra, Calculus II, Discrete Math

Technical Skills

Programming Languages: C++, C, Python, Rust, Bash shell scripting, Java, Lua, Go, x86 & ARM Assembly
Software: git, LVGL, Eclipse, VSCode, gdb, vim, ssh, CMake, Wireshark, Microsoft Visual Studio, Virtual Box, Jira, gitlab
Technologies: Linux, ssh, AWS EC2, regular expressions, HTML, CSS, Markdown, TOML, YAML, JSON, Docker

Projects

K-nearest Neighbor Algorithm — *Feb 2022 – May 2022*

- Implemented K-nearest neighbors algorithm for the MNIST dataset in Rust & C to recognize handwritten numbers
- Practiced file I/O, FIFOs, shared memory, semaphores, message queues, & network programming in a Linux environment

Movie Watch List — *Jan 2022 – May 2022*

- Developed a Flask web application with Docker to record movies & shows users watch to their accounts
- Designed software intelligently by utilizing design patterns to solve common software development issues

Watson Combat Robotics League (*3rd place ranking*) — *Dec 2020 – May 2021*

- Collaborated cross-discipline with computer, electrical, & mechanical engineers in a team of six members
- Utilized Arduino Nanos to control motors & Bluetooth connectivity using servo & serial port software libraries