Patrick Igiraneza

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PROFESSIONAL EXPERIENCE

Technical Intern I - Software Engineering (Bootstrap) May 2024 – August 2024

Cisco Systems, Inc, Ottawa, Ontario

- Increased unit test code coverage of IOS XE (Internetworking Operating System) bootstrapping code from 21% to 69% using mocking
- Investigated and fixed a linking issue that made mocking and testing static functions infeasible
- Prevented static function inlining in test builds for better branch coverage and test debuggability (1:1 mapping from C source to test function) while not impacting production builds performance

Technical Intern I - Software Engineering (Build infrastructure) January 2024 – May 2024

Cisco Systems, Inc, Ottawa, Ontario

- Decreased build times by ~30 mins by rewriting a packaging bash script into a C program
- Improved **GNU Make** debuggability by introducing a new logging API which was both human and machine readable
- Fixed output syncing issues with Make parallel job execution by ensuring that logs were emitted in the right order
- Created a GitHub checks compliant web server in Golang to run a build and tests on each pull requests

Software Developer (CO-OP) May 2023 – Aug 2023

University of Ottawa, Neurotrauma Impact Science Laboratory

- Assisted two PhD students in data collection and dataset preparation for their machine learning research
- Demonstrated excellent time management skills, and effectively balanced multiple tasks and priorities
- Collected and annotated over 6,000 images and 3,000 videos to be used in training and testing
- Assisted in the training of a **YOLOv8** neural network to detect ice hockey rink landmarks, and improved the overall accuracy by 5% by sanitizing the dataset

SKILLS

- **Programming languages**: C, Go, Python, Java, Bash, JavaScript, Node.js, TypeScript, PHP, Make
- **Frameworks:** Node.js, React, Next.js, Tailwind CSS, Prisma, jQuery
- **Developer Tool**s: Linux, Git, Docker, make, GitHub Actions, Netlify, Vercel, PlanetScale, Vim
- **Network**: OSI model, TCP/IP, DNS, SSH
- **Databases:** MySQL, PostgreSQL, SQLite
- **Cybersecurity:** Kali Linux, Binary and Web Application Reverse engineering
- **Languages:** English (Advanced) & French (Professional Proficiency)

EDUCATION

Bachelor of Applied Science, Software Engineering (CO-OP) September 2022 – December 2026

University of Ottawa (Ottawa, Ontario)

- **GPA**: 9.0/10
- Awarded merit scholarships of $1,000 for academic excellence. Dean’s list 4 Semesters
- Available for a 4 months Co-Op internship (Fall 2025)

PERSONAL PROJECTS

- **Thermocouple ADC Driver (Rust, SPI)**: Wrote a microcontroller driver that uses a binary search algorithm to convert voltage readings into temperature using a lookup table. Written to work on a rocket project.
- **Webserver (C & Rust):** Implemented a HTTP server from scratch in both C (with multithreading) and Rust
- **Melodie - Ear training PWA (Next.js)**: An ear training web application that works offline and can be installed like a native app on mobile. Created to help me and other musicians train their chord progression and melody recognition skills
- **Job Extension:** A Chrome extension that fetches listings from popular job boards and automates the application process