Nathan Cohen

He/Him

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Education

Purdue University — West Lafayette, IN

Bachelor of Science in Computer Science — *Aug 2017 – May 2021*

Certificate of Entrepreneurship — *GPA:* 3.77/4.00

Experience

Cisco Systems — San Jose, CA

Software Engineer — *June 2021 – Current*

- Performed three successful line card bring ups, powered by Cisco's next gen Silicon One ASIC, on distributed systems running SONiC. Validated with iBGP traffic tests testing speeds up to 400G.
- Designed distributed platform infra solutions for SONiC, originally only having support for fixed systems. Including mechanisms for topological discovery and dynamic generation SerDes settings for NIF and front facing interfaces.
- Re-implemented caching mechanism for YAML files up to 2MB, yielding performance improvement by reduction of utilization by up to 94%.
- Produced remote test utility to validate NPU hardware values with the ones provided at initialization.

Cisco Systems — San Jose, CA

Software Engineering Intern — *May 2020 – Aug 2020*

- **Causality**: Designed and implemented a root cause analysis library, which was used for detecting failures in routers. Strategies include parsing and evaluating custom expressions across various hierarchical forms of data.
- **Causality UI**: Developed a React front end to display hierarchical results of a root cause analysis on a causality graph.

Discover Financial Services — Riverwoods, IL

Software Engineering Intern — *May 2019 – Aug 2019*

- **Secure Document Upload**: Implemented backend of account recovery system in Spring Boot application within security spec. Successfully deployed and maintained product with 95% test coverage. Implemented and maintained Jenkins pipeline for code deploy and testing.
- **JWT 2.0**: Refactored legacy API to abide by modern security standards.

Purdue University — West Lafayette, IN

Teaching Assistant & Volunteer Work — *May 2018 – Dec 2019*

- **CS 18000: Problem Solving and Object-Oriented Programming**: Authored bi-weekly labs for Purdue's introduction to computer science course in Java. Mentored students in completing their work.
- **CS 25100: Data Structures and Algorithms**: Worked as senior undergraduate teaching assistant under Professor Gustavo. Prepared and graded homework and exams, and wrote automated grading bash scripts.
- **Purdue Athletic Life Success Program: Computer Science Instructor**: Organized and directed a 4-week introductory computer science course for students from Lafayette area primary schools.

Projects

QUIC/UDP Video Stream: Designed 2 client/server video streaming applications to deconstruct, send, and reassemble H.264 frames over QUIC and UDP.

pyparcel: Released python meta-class library to generate struct packing functions at run time for python objects.

Boarding Simulator: Designed multithreaded program to simulate the airbus boarding experience, testing different patterns of order to decrease wait time.

Depend On Me: Built backend for web application performs task managements and scheduling for teams practicing Agile.

LST Scheduler: Developed and implemented a new process scheduler for the XINU operating system which used slack time as means for deciding priority.

Relevant Coursework

- Data Structures & Algorithms
- Operating Systems
- Analysis of Algorithms
- Computer Networks
- Information Systems
- Systems Programming
- Compilers
- Cryptography
- Computer Security

Programming Skills

Languages: C, C++, Python, Java, Scala, Rust, ARM, SQL, PL/SQL, JavaScript, TypeScript
Technologies: Git, GCC, LLVM, LLDB, Node, React, Spring Boot, JDBC, JUnit, Jenkins, LaTeX, ANTLR