Oliver Calder

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Firmware Engineer and open source software developer, with particular emphasis on low-level systems, including kernels, storage, and virtualization. Highly skilled in C and Python with strong experience and interest in Rust for systems and applications. I seek to solve problems by writing efficient, modular, and resilient software while keeping the hardware and end user in mind. I am a longtime Linux user and a strong open source advocate, and a clarinetist and pianist with a passion for classical music.

WORK EXPERIENCE

Firmware Engineer, Seagate Technology

JUL 2022 – PRESENT

- Wrote and debugged firmware for next-generation dual-actuator enterprise hard drives.
- Worked in C and ARM assembly, using UDS dumps and hardware emulators to identify, understand, and solve firmware problems.
- Wrote a hard drive performance modeling simulation from scratch in Rust to develop better strategies for data integrity scanning.

Software Engineering Intern, Cray/Hewlett Packard Enterprise

JUN 2021 – SEP 2021

- Built and released Linux software and security updates based on for the Cray XCCS line of supercomputers.
- Wrote scripts to identify unpatched security vulnerabilities and allow the team to respond more quickly to customer needs.

Data Research Assistant, Minnetronix, Inc.

DEC 2019 – JAN 2020

- Built automation scripts to streamline data processing workflow and scale up speed dramatically.
- Used Python to verify and manipulate spreadsheets and script file management in a Windows environment.

Computer Science Prefect, Lab Assistant, Carleton College

SEP 2019 – JUN 2022

- Communicated key Computer Science concepts to students in a way which builds on their current understanding and reinforces algorithmic problem-solving skills.
- Guided students through debugging their own code, encouraging efficient and consistent solutions to problems.

RESEARCH

Exploratory Operating Systems, Carleton College

JUN 2020 – SEP 2020, DEC 2021

- Wrote a minimal unikernel in Rust, designed for use in serverless contexts and optimized for speed and simplicity.
- Developed performance benchmarks to compare the Rust unikernel to Linux, Docker, and processes, and demonstrated that the Rust unikernel dramatically outperformed industry standards.

Sonic Signatures, Carleton College

JUN 2019 – JUN 2020

- Wrote modularized Python scripts to process Shakespeare plays into character phoneme data for use in machine learning classification.
- Used scikit-learn to predict characteristics of individual characters using a variety of machine learning models.

EDUCATION

Carleton College
Northfield, MN

SEP 2018 - JUN 2022

B.A. Computer Science, Mathematics | GPA: 3.85

RELEVANT COURSEWORK

AI
Advanced Algorithms
Combinatorial Theory
Computability and Complexity
Computational Mathematics
Computer Systems
Computer Graphics
Data Structures
Differential Equations
Linear and Abstract Algebra
Multivariable Calculus
Operating Systems
Probability
Programming Languages
Quantum Computing
Software Design

AWARDS

David Pollatsek ‘96 Prize in Computer Science

Distinction in Mathematics

Graduated Cum Laude

LANGUAGES

Expert: C, Python

Skilled: Bash/sh, Rust, Scheme

Familiar: Java, Go, SQL, Assembly

SKILLS

AI, automation, concurrency, containerization, firmware, gdb, git, HPC, Jira, Jenkins, kernel development, LaTeX, Linux, ML, parallel computing, qemu, vim, virtualization, UDS, unikernels