Walton G. O'Connor

waltoconnor@icloud.com
https://waltoconnor.dev
https://github.com/waltoconnor
503-475-0101

About me

Results oriented programmer with a track record of delivering large, long term, collaborative projects. Master's and Bachelor's degree in computer science plus a year of experience as a software engineer. Expert in computer networking and high performance computing. Interested in computer architecture and operating systems.

Research

Cedar Dataplane Telemetry System   **June 2019-June 2023**
- Built full stack system for controlling experimental Broadcom dataplane telemetry switch, including low level driver in **C** and Rust, control and result processing server with **CUDA** and **Elixir**, and high level web interface in **Vue.js**, **Typescript** and **D3.js**
- Worked extensively with senior Broadcom hardware engineers to implement driver and validate functionality of new hardware features. Presented reports and demonstrations of features to Broadcom senior engineers and management.
- Developed a number of network security and health monitoring applications utilizing the Cedar system.

Multifractal Properties of Internet Traffic   **June 2022-May 2023**
- Developed high performance network analytic tools to discover fractal patterns in internet traffic using **Rust** and **Python**
- Automated the collation of results in to PDF reports using **Reportlab**
- Deployed analysis tools to several college campuses using **NixOS**

Accelerated Tiling Solver   **June-Oct 2017**
- Created high performance program in **C++** to solve combinatorics problem involving placing tiles on a grid whose solutions were important constants for cohomological objects.
- Optimized with hand rolled x86 **Assembly**; accelerated program using CUDA providing a $1000\times$ speedup
- Further accelerated system by distributing program across campus computers, wrote control and result collection server in **Java**

Employment

Software Engineer   **M Financial**   **Jan-June 2018**
- Converted manual process of tabulating end of month accounts to a **CD/CI** pipeline that automated what was previously a week of work for six actuaries
- Task involved collecting data from a number of internal partner companies and internal sources, applying business rules, and updating a set of **SQL** databases
- Wrote a variety of wrappers and web interfaces using **HTML**, **CSS**, and **Javascript** to ease the process of testing the consistency of the incoming data and the validating it before committing it to the database

Intern Software Developer   **M Financial**   **July-Dec 2015**
- Built internal webapp using **Node.js** and **SQL** that plotted concentrations of life insurance customers on a map of the United States for risk management analysis
- Wrote analysis suite that allowed a user to select regions of the map and view historical and projected future trends in customer demographics

Education

MS in Computer Science   **University of Oregon**   **May 2023**
- Networking and Network Security, High Performance Computing, Computer Architecture, Machine Learning, Programming Language Theory, Computer Vision
- GPA: 3.9

BS in Computer Science   **University of Oregon**   **June 2020**
- GPA: 3.86

Other Skills

Linux, Git, C#, Haskell, Kotlin, OCaml, Bash, Kubernetes, Gem5, Nomad, Wireshark, VMWare, ZFS, GlusterFS, SystemD, OpenMPI, OpenACC, OpenCL, numpy, scipy, matplotlib, tidyverse, Vue.js, React.js, InfluxDB, Flask, Vulkan, OpenGL, embedded systems