Kaley Chicoine

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Technical Skills

Languages: Rust, Python, C, C++. TypeScript, SQL

Familiar Technologies: Zero-knowledge proof systems, Blockchain development, Merkle trees and hashed data structures, Nginx, RaspberryPi, Debian/Linux

Education

- **University of Oregon** — **Eugene, OR**
  M.S. Computer Science — 2017 – 2021

- **Pennsylvania State University** — **State College, PA**
  B.S. with Honors, Computer Science — 2012-2017

Experience

- **Espresso Systems, Inc** — **Remote**
  Systems Software Engineer — November 2021 – August 2023
  - Redesigned a merkle tree data structure to support searchable key/value pairs and a hash function that is generic of the -arity of the tree
  - Worked with product team to research, design, and implement L1 testnet reward collection mechanism
  - Wrote node/client and server code in Rust to interface with Nginx web server which provides data availability to nodes running a distributed, decentralized consensus protocol

  Technical Environment: Rust, Nix, Nginx, Docker

- **University of Oregon** — **Remote**
  Graduate Research Fellow, High Performance Computing Lab — August 2020 – March 2021
  - Expanded LLVM call graph capabilities to statically generate call graphs for high performance scientific computing libraries
  - Added centrality metrics and other analysis information to call graph nodes
  - Second author on ACM publication: Empirical Investigation of Code Quality Rule Violations in HPC Applications (Hussain, EASE '21)

  Technical Environment: LLVM/Clang, C++, Python, Bash scripting, Docker

- **Connected Signals, Inc.** — **Eugene, OR**
  Intern — October 2019-May 2020
  - Wrote efficient path-finding algorithms using OpenStreetMap data for Enlighten, an app which used predictive information about stoplights to optimize traffic flow
  - Worked with the front-end team using React and native Java interfaces to create real-time data visualizations

  Technical Environment: React, C++, TypeScript, SQL

- **University of Oregon** — **Eugene, OR**
  Graduate Research Fellow, Sventek Lab — September 2017 – September 2019
  - Studied small operating systems with a focus on security and optimization in resource-constrained environments
  - Built a ground rover robot that uses a complex event processing stream database to coordinate movement and goals among a system of robots and static computers
  - Added encryption and secure key-establishment functionality to custom UDP remote procedure call library
  - Recipient of Promising Scholar Award, 2017

  Technical Environment: C, BeagleBone and Raspberry Pi programming with a variety of sensor components

Interests: Most outdoor activities (endurance sports, climbing, mountaineering), the many uses of microcontrollers, houseplants and gardening