

## Education

### Cornell University

Ithaca, NY

B.A. in Computer Science & B.A. in Mathematics

August 2021 - December 2024

<b>Organizations</b>	Capra Research Group, Computer Reuse Association
<b>Graduate Coursework</b>	Algorithms, Compilers, Distributed Systems, Parallel Computing, Programming Languages
<b>Undergrad Coursework</b>	Computer Architecture, Discrete Structures, Functional Programming, Object Oriented Programming, Operating Systems
<b>GPA</b>	3.7/4.0 (Dean's List Recipient)

## Experience

### Cornell University, Computing and Information Sciences

Ithaca, NY

Research Assistant, Programming Languages and Computer Architecture @ Capra, Advised by Dr. Adrian Sampson

May 2024 – Present

- Developed *Rio*, a domain specific language for describing packet scheduling policies, written in OCaml.
- Wrote a compiler from Rio to Calyx (hardware description language developed at Capra), thereby implementing packet scheduling policies in hardware.
- Wrote a “topology to topology” compiler to convert between Rio programs, as described by Mohan et al.
- Contributed to the Calyx project by extending Calyx-Py, a Python generator for Calyx programs.

Teaching Assistant, CS 3410 Computer System Organization, Taught by Dr. Adrian Sampson and Dr. Giulia Guidi

August 2024 – Present

- Held office hours and labs for 6+ hours per week, graded, demoed, and provided feedback for both assignments and labs, and proctored exams.
- Setup infrastructure for automatic grading.

Head Teaching Assistant, CS 3110 Functional Programming, Taught by Dr. Michael Clarkson

August 2023 – May 2024

- Held office hours and labs for 6+ hours per week, designed, graded, and provided feedback for both assignments and labs, and proctored exams.
- Ran TA meetings to prepare fellow teaching assistants for assignments, labs, and office hours.
- Guided multiple teams of four students in completing their final class project.
- Received a faculty-nominated CS Course Staff Exceptional Service Award!

### Cornell University, Math Department

Ithaca, NY

Teaching Assistant, Math 1110 Calculus I

August 2022 – December 2022

- Held office hours for 2+ hours per week, and graded and provided feedback for weekly homework assignments.

## Projects

### Multicore Processor

August 2024

Culmination of a semester of CS 4420 Computer Architecture labs.

- Iterative multiplier/divider, 5-stage pipelined processor with stall/bypass logic, direct-mapped cache, and memory network all implemented in Verilog.
- Accompanied by various multithreaded programs to be run on the processor.

### Fault-Tolerant Sharded Linearizable Distributed Key-Value Store

April 2024

Key-value store, built over the DSLabs framework for CS 5414 Distributed Computing Principles.

- Keys grouped into “shards”, each managed by different replica groups that provide consensus via a custom implementation of multi-Paxos.
- Multi-key transactions handled via the three-phase commit protocol.

### Operating System

January 2024

Key parts of EGOS, a miniature operating system designed for CS 4411 Operating System Practicum.

- User space multi-threading package, RISC-V memory protection setup, disk cache, and FAT file system all implemented in C.

### Where's My Class

August 2023

Web application for Cornell students to visualize class locations on a map and plot routes between them.

- UI built with ReactJS and application state managed through Redux.
- Course data fetched with Cornell's Course Roster API and updated monthly with Github Actions.
- Map and routing data generated through Mapbox's web services APIs.

View [repository](#) or [website](#)

## Skills

<b>Languages</b>	Bash, C, C++, Java, Javascript/HTML/CSS, $\LaTeX$ , OCaml, Python, Rust, Verilog, English, American Sign Language, Spanish
<b>Frameworks/Libraries</b>	Node, NumPy, Pandas, PyTorch, ReactJS, Redux, Scikit-Learn, Yacc
<b>Tools</b>	Docker, Flask, Git, GitHub, Linux (Arch and Ubuntu), Unix, Vim