

Education

Georgia Institute of Technology, Atlanta GA

Aug 2018 - May 2022

B.S Computer Science, GPA: 4.0

- **Concentrations:** Computer Systems and Architecture, Theory
- **Selected Coursework:** Data Structures & Algorithms, Advanced Algorithms, Operating Systems, High-Performance Computer Architecture, Compilers, Programming Languages, Applied Combinatorics

Experience

Software Engineering Intern, PyTorch Dev Infra, Meta, Menlo Park CA

May 2021 - Aug 2021

- Patched clang-tidy to support a max-tokens pragma and infinite loop check
- Developed the infra to build, test, and deploy a fork of clang-tidy in PyTorch CI using Docker and GitHub Actions
- Ported the reflection_pad1d_backward operator to the structured kernel model
- Authored a blog post documenting steps to obtain and visualize compiler profile information and header file usage
- Presented my work before the Meta AI Division

Software Engineering Intern, Innovation Lab, NCR, Atlanta GA

June 2020 - Aug 2020

- Developed a subscription recommendation model using backtesting with a standard deviation heuristic
- Built a React frontend that queries the model and displays results on an interactive timeline
- Co-authored a report that makes a business case for the model and data acquisition needed to improve it
- Implemented server routes in Express to create and update consumer profiles using NCR's CDM API
- Delivered a talk on using Web Components to build reusable UI elements at the NCR Global Unconference

Software Engineering Intern, NCR, Atlanta GA

May 2019 - Aug 2019

- Enhanced the Emerald POS test suite with 7 automated test scripts written in C# using Selenium
- Reduced the running time of the test suite by 75%
- Installed and configured 3 VMs on servers located in Waterloo to enhance team productivity

Projects

QVMP: Implemented and evaluated the Quantum Verification of Matrix Products algorithm in Qiskit. Used QRAM-based matrix encoding to support input dimensions of 40 to 90 on a NISQ machine, about a 700% increase over naive non-superposition based encoding.

Atomics in Vortex: Worked with a group of two students to implement, test, and evaluate the RISC-V atomics extension in Vortex. Incorporated the LR/SC and AMO instructions into a high-performance bank-based cache with minimum overhead.

Open Source Contributions: I enjoy working on open-source projects and contribute patches when I can. Notable projects include PyTorch, nushell, and romejs.

Involvements

dependently-typed

Aug 2021 - Present

Founder, President

- Founded a programming languages and compilers club at Georgia Tech
- Coordinated weekly tech talks, tutorials, and paper discussions
- Overseeing projects like adding a pipe operator to Python and retrofitting a type system onto Lua

HexLabs

Dec 2018 - Nov 2021

Co-director, Software developer, Horizons event lead

- Led a team of 80 people to run four hackathons: HackGT 8, Prototypical, HealthTech, and Catalyst
- Completed the rebranding of HackGT to HexLabs
- Raised over \$200k to run these events and expand to initiatives like a year-round high school outreach program
- Developed an admissions puzzle for HackGT 7 and the Fluo Web Components library

Skills

Languages: Rust, JavaScript, TypeScript, C, Java, Python, Haskell, OCaml, Go, Bash

Technologies: git, Linux, Docker, OOP, Functional programming

Interests: PL design, Compilers, Operating Systems, Quantum Computing