

EDUCATION

Georgia Institute of Technology

B.S. in Computer Science, Major GPA: 4.0

Atlanta, GA

Aug 2018 – Dec 2021

- **Concentrations:** Computer Architecture & Modeling/Simulation
- **Selected Coursework:** Systems & Networks, Design of Algorithms, Data Structures & Algorithms, Computer Organization, Objects & Design, Compilers & Interpreters, Digital Design Lab, Design of Operating Systems

EXPERIENCE

Jane Street Capital

Software Engineering Intern

New York, NY

Jun 2021 – Aug 2021

Citadel Securities – Advanced Technology Group

Software Engineering Intern

Chicago, IL

Feb 2021 – Apr 2021

- Created a high-throughput end-to-end load testing system for quality assurance and performance measurement
- Identified bottlenecks in the underlying system, evaluated their root causes and helped plan long-term solutions
- Technologies used: multicast, kernel-bypass networking, C++17, KDB/q, gRPC, Ansible

Two Sigma Investments – Storage Reliability Engineering

Software Engineering Intern

New York, NY

May 2020 – July 2020

- Designed tooling and a REST web API for viewing statistics on various internal storage products
- Created a framework for efficient data acquisition from various sources (DBs, keystores, filesystems)
- Mapped out millions of dollars in storage expenditures spread over 100+ petabytes, enabling future cost saving

Google – Node.js Team

Software Engineering Intern

Sunnyvale, CA

May 2019 – Aug 2019

- Acted on open-source projects' needs (e.g. LibSass) to design scalable solutions for creating WebAssembly libraries
- Created JavaScript ↔ WebAssembly bindings generator to enable the use of native C libraries in Node.js
- Coordinated efforts with members of the Node community to add WebAssembly support for Node's N-API
- Built support for interacting with WebAssembly programs in the V8 JavaScript Engine's API

Rolltrax

Founder, Software Engineer

Atlanta, GA

Nov 2017 – May 2019

- Designed and implemented a system to meet the needs of Work-Based Learning classrooms across Georgia
- Launched attendance management system for student interns, utilized by North Springs High School since 2018

PROJECTS

- **Optimizing TigerIR Compiler:** Designed and built an optimizing compiler for Compilers course. Utilized my own OCaml nanopass framework to perform instruction selection and optimizations such as Chaitin-Briggs register allocation, deadcode elimination, and copy propagation.
- **Raspberry Pi Operating System:** Implemented a kernel for a Raspberry Pi in Rust for Operating Systems course. Developed bootloader, drivers, memory management, shell, FAT32 filesystem, preemptive multitasking.

PUBLICATIONS

- Ohad Rau, Caleb Voss, and Vivek Sarkar, “Linear Promises: Towards Safer Concurrent Programming”, in 35th European Conference on Object-Oriented Programming (ECOOP 2021), LIPIcs, Vol. 194, pp. 13:1-13:27, 2021. <https://doi.org/10.4230/LIPIcs.ECOOP.2021.13>

SKILLS

Languages: OCaml, Java, C, Rust, Ruby, C++, Python, JavaScript/ES6, Coq, VHDL, mips32/aarch64/x86 asm

Technologies: Functional Programming, OOP, Linux, SQL, gRPC, Multicast, Formal Verification, FPGA, WASM

Interests: Compiler Design, Systems Programming, Quantitative Finance, Hip-Hop Music, Cooking, Travel