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Ohad Rau

https://ohad.space
US/Israel Dual Citizen

Education

Georgia Institute of Technology — Atlanta, GA
B.S. in Computer Science, Major GPA: 4.0 — *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 — New York, NY
Incoming Software Engineering Intern — *Jun 2021 – Aug 2021*

Citadel Securities — Chicago, IL
Software Engineering Intern — *Feb 2021 – Apr 2021*

- Interning with Advanced Technology Group

Two Sigma Investments — New York, NY
Software Engineering Intern — *May 2020 – July 2020*

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

Google — Sunnyvale, CA
Software Engineering Intern — *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 — Atlanta, GA
Founder, Software Engineer — *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
- Reduced average server latency by 86% and increased server throughput by 530% while adding new features
- Designed user-customizable dashboard for teachers to monitor attendance analytics and statistics

Projects

- **Undergraduate Research**: Worked with Dr. Vivek Sarkar and Dr. Caleb Voss in Habanero lab. Designed a linear type system and formalized operational semantics for a safe concurrent programming language, allowing for compile-time detection of common concurrency bugs. *Submitted for publication.*
- **Optimizing TigerIR Compiler**: Designed and built an optimizing compiler for my 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 my Operating Systems course. Developed bootloader, drivers, memory management, shell, FAT32 filesystem, preemptive multitasking.
- **Pipelined Datapath**: Implemented a datapath for a RISC CPU based on MIPS in Systems and Networks course. Built a digital version in a logic simulator. Created support for hardware devices using interrupts. Reimplemented the entire datapath using a 5-stage pipeline with register forwarding, flushing, and stalls. Hand-wrote microcode and verified results using test programs.

Skills

Languages: OCaml, Java, C, Rust, Ruby, C++, Python, JavaScript/ES6, Coq, VHDL, mips32/aarch64/x86 asm
Technologies: Functional Programming, OOP, Linux, Web, SQL, Formal Verification, FPGA, WASM
Interests: Compiler Design, Systems Programming, Quantitative Finance, Hip-Hop, Cooking, Travel