# Liam Arzola

🗣 Ithaca, NY 14850 💌 Lma77@cornell.edu 🔥 https://www.linkedin.com/in/liam-arzola/

github.com/liamo215

#### **EDUCATION**

**B.A.** Computer Science 12/2023

Cornell University

GPA: 3.35

Relevant Graduate Coursework: Distributed Systems, Advanced Systems, Advanced Networking, System Security

### RESEARCH EXPERIENCE

#### Research Intern at The Max Planck Institute for Software Systems

Operating Systems Group, Prof. Antoine Kaufmann

Working with Prof. Antoine Kaufmann on host networking stack research. Worked on extending TAS, an optimized userspace TCP stack, by adding optimizations for larger flows, including hardware offload and extended message buffer support (DPDK). I am also working on Virtuoso, a host networking stack for virtualized environments. My primary contribution has been adding support for Docker containers and integrating them into our benchmark framework. Virtuoso is currently under submission to NSDI'24 (https://arxiv.org/abs/2309.14016). Additionally, I'm working on modifying TAS to support us scale reconfigurable optical networks in collaboration with Prof. Yiting Xia.

#### Research Assistant at Cornell University

Theory Meets Practice Lab, Prof. Lorenzo Alvisi

Working with Professor Lorenzo Alvisi's group on a byzantine fault tolerant relational database. My work so far has involved designing a relational frontend engine, the implementation of popular online transaction processing benchmarks (TPCC/Auctionmark), as well as the integration of CockroachDB as a baseline system.

#### TEACHING EXPERIENCE

### Undergraduate Teaching Assistant - Operating Systems Practicum

Cornell University

- Teaching assistant alongside Prof. Robbert van Renesse for the optional advanced Operating Systems Practicum.
- Held office hours and graded student OS assignments in C in the Earth and Grass Operating System (EGOS) and EGOS-2000 @.

#### PROFESSIONAL EXPERIENCE

### Software Engineer Intern

Microsoft

Worked on the Azure Storage Capacity Management team on designing and implementing a leader based crash fault tolerant consensus library for partitioning requests over a cluster of workers. (C#, .NET)

## Software Engineer Intern

Quantum Resistant Ledger

Rewrote core library from C++ to Rust and added multithreading support for concurrent XMSS signature verification.

#### Cofounder/Software Engineer

KabCash ∂

Helped build a community based lending solution for underbanked adults in Latin America. Built server side logic and infrastructure using Python, Flask, and Terraform. Wrote business logic and deployed AWS autoscaling groups for production and testing.

#### **Software Engineer Intern** 06/2021 - 08/2021

Designed and implemented sync progress aggregation for backups. (Rust)

10/2022 - present

06/2023 - present

01/2023 - 05/2023

05/2022 - 08/2022

12/2021 - 05/2022

08/2021 - 11/2021

**Launch Intern** 06/2020 - 08/2020

Dropbox ∅

Developed an API for retrieving a summary of sync failures. (Rust/Python)

#### Precollege Residential Community Advisor

06/2019 - 08/2019

Cornell University

Led events for students, enforced policy on the floor and within the residence hall, and was responsible for establishing a sense of community within the residence hall.

**Lead Mentor** 12/2016 – 01/2017

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Taught the fundamentals of computer science to 20 kids between the ages of 6 and 13.

### **PROJECTS**

#### Gossip ∂

A peer to peer gossip client built in Rust. Gossips a user provided digit to other clients, updating to the freshest value. Supports an adversarial mode that attempts to attack peers. Built using Tokio for networking and native OS threads for processing user input.

### egos-2000 Paging Support ⊗

Worked with Yunhao Zhang to add paging to the egos-2000 operating system. (C)

### **SKILLS**

• Rust, C, C++, Terraform (AWS), SQL, Python, C#, DPDK, gdb, perf, Wireshark

### **HACKATHON AWARDS**

1st Place Startup Prize at Miami Hack Week HF0 Backend Capital	2021
2nd Place at the Miami Bitcoin Hackathon	2018
1st Place at the Matrix & Visa IoT and AI Hackathon	2017