

Zachary Marcus

zacharyjmarcus@gmail.com • <https://zmarcus.com> • 704.763.5707

WORK EXPERIENCE

Amazon

Boston, MA

Software Engineer, L5 | AWS - Security Assurance & Compliance

August 2022 - Present

- Extend services written in TypeScript and Java supporting delivery of compliance information to AWS customers
- Prototype and design AWS-hosted microservices using new frameworks and system design paradigms
- Build out monitoring, logging, and continuous integration testing of customer-impacting services
- Collaborate with security auditors and customer stakeholders to deliver highly-available access to security reports

Google

Sunnyvale, CA

Software Engineer, L4 | Core Systems - Architecture and Optimization

March 2019 - April 2022

- Maintained large-scale data pipelines; migrated highest-cost pipelines to more robust frameworks
- Enhanced github.com/google/perf_data_converter to process performance data on new system configs
- Debugged and addressed production issues as part of a monthly oncall rotation
- Optimized and increased reliability of internal high-traffic proxy and privilege escalation service
- Established highly reliable process for evaluating safety and monitoring of system calls

Google

Mountain View, CA

Software Engineering Intern | ChromeOS - WiFi

April 2018 - August 2018

- Designed and implemented new features to detect regressions during device analysis and bring-up
- Refactored test design to reduce technical debt and facilitate reliability and performance testing
- Collaborated with other engineers and a third-party vendor to incorporate new test chamber
- Improved performance measurements by leveraging chamber to characterize real-world WiFi behavior

Facebook

Menlo Park, CA

Software Engineering Intern | Infrastructure - TAO

January 2018 - March 2018

- Improved consistency across Facebook's major data store, a distributed cache written in C++
- Designed and implemented a new method of evicting stale cache items, improving hit rate by 0.7%
- Decreased upstream QPS to leader machines by 1.8%, saving considerable operating costs

MIT Lincoln Laboratory

Lexington, MA

Software Engineering Co-op | Embedded and Open Systems

January 2017 - September 2017

- Created C++ library to facilitate radar subsystem integration between defense contractors
- Developed mission-critical software in C++ and analyzed bottlenecks for real-time signal processing
- Designed data collection and image analysis framework; earned first in fake news detection hackathon

Advanced Micro Devices (AMD)

Boxborough, MA

Software Engineering Co-op | Shader Compiler

January 2016 - August 2016

- Designed and implemented pipeline in Python to streamline driver performance analysis
- Developed test cases and internal transcompiler for compiler's new intermediate language specification
- Improved performance of two AAA videogames by 15% by optimizing cache and register usage

NU Computer Architecture Research Lab

Boston, MA

Undergraduate Research Assistant

May 2015 - October 2018

- Primary author of reproducibility paper published in *Parallel Computing* October 2018
- Earned first place nationally at SC 2017 and broke Linpack student cluster competition records at ISC 2017

EDUCATION

Northeastern University

Boston, MA

Bachelor of Science in Computer Engineering

December 2018

Honors: GPA: 3.8 (*magna cum laude*), Dean's List, Eta Kappa Nu, Tau Beta Pi, National Merit Scholar

Coursework: High Performance Computing, Object Oriented Design, Networks & Distributed Systems, Algorithms & Data, Embedded Design, Logic & Computation, Electronics, Web Development

SKILLS AND ACTIVITIES

Proficient Languages: C++, Python, C, Go, Typescript, Java

Development Tools: Git, Mercurial, Perforce, SVN, Linux, Windows

Technical Experience: AWS, OpenMP, React, Angular, SQL, CUDA, OpenCL