Zachary Marcus

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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 asynchronous processing 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 in C++ and Go; migrated highest-cost pipelines to more robust frameworks
- Enhanced github.com/google/perf_data_converter to process performance data on new system configurations
- 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