Zachary Marcus

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EDUCATION

Northeastern University   Boston, MA
Candidate for Bachelor of Science in Computer Engineering
GPA: 3.8 • *Graduation Date:* December 2018
Honors: Dean's List, National Merit Scholar

WORK EXPERIENCE

Google   Sunnyvale, CA
Software Engineer II | Google Cloud - Architecture and Optimization   Incoming March 2019

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 queries per second 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 Python tool to streamline driver performance analysis
- Developed test cases and internal transcompiler for compiler's new intermediate language specification
- Improved performance of 2 major applications by 15% by optimizing cache and register usage

RESEARCH EXPERIENCE

International Supercomputing Competitions   Boston, MA
Northeastern University Team Application Leader   July 2015 - September 2018
- Primary author of paper published in *Parallel Computing* October 2018
- Profiled application-specific performance characteristics to make source code modifications
- Earned first place nationally at SC 2017 and broke Linpack competition records at ISC 2017

Computer Architecture Research Lab   Boston, MA
Undergraduate Research Assistant   May 2015 - May 2016
- Developed Android binaries for side-channel analysis of mobile device chipsets
- Expanded Android app for simplified GPU benchmarking, porting a heterogeneous benchmark suite

SKILLS AND ACTIVITIES

Proficient Languages: C++, Python, C, Javascript, Java
Familiar Languages: MIPS Assembly, SystemVerilog
Development Tools: Git, Mercurial, SVN, Perforce, Linux, Windows
Technical Experience: MPI, OpenMP, React, Angular, Ionic, HTML+CSS, CUDA, OpenCL, Soldering
Clubs and Activities: Planetary Lander Software Lead, IEEE Webmaster, NEU Hardware Hackathon (1st),
                                       MakeBU Hackathon (1st), Pavlok Hardware Hackathon (2nd)
Volunteer Work: Husky Ambassadors, Hostelling International, Generation Citizen