

Zachary Marcus

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EDUCATION

Northeastern University

Boston, MA

Candidate for Bachelor of Science in Computer Engineering and Computer Science

GPA: 3.8 • Graduation Date: December 2018

Honors: Dean's List, National Merit Scholar

WORK EXPERIENCE

Google LLC

Mountain View, CA

Software Engineering Intern | ChromeOS - WiFi

April 2018 - Present

- 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 chamber into testing
- Improved performance measurements by leveraging chamber to characterize real-world WiFi behavior

Facebook, Inc.

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, saving millions in 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% or more by optimizing cache and register usage

RESEARCH EXPERIENCE

International Supercomputing Competitions

Boston, MA

Northeastern University Team Application Leader

July 2015 - Present

- Profiled application-specific performance characteristics to make source code modifications
- Earned first place nationally at SC 2017; primary author of paper published in *Parallel Computing*
- Broke the competition record for Linpack at ISC 2017 in Frankfurt, Germany

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, HTML5, CSS3, 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