

# Zachary Marcus

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## EDUCATION

### **Northeastern University**

*BS in Computer Engineering and Computer Science*

*Honors: Dean's List, National Merit Scholar*

*Relevant Coursework: High Performance Computing, Object Oriented Design, Networks and Distributed Systems, Algorithms and Data, Embedded Design, Digital Logic*

**Boston, MA**

September 2014 - May 2019

GPA: 3.84

## TECHNICAL EXPERIENCE

### **MIT Lincoln Laboratory**

*Software Co-op Engineer*

**Lexington, MA**

January 2017 - September 2017

- Designed C++ library to facilitate radar subsystem integration
- Wrote and evaluated large scale parallel applications
- Analyzed performance bottlenecks and optimized real-time signal processing
- Developed mission-critical software in C++ for use in signal processing
- Leveraged open communication libraries to achieve high performance across platforms

### **Advanced Micro Devices (AMD)**

*Software Co-op Engineer*

**Boxborough, MA**

January 2016 - August 2016

- Designed Python tool to streamline driver performance analysis
- Communicated with hardware engineers to determine performance metrics for applications
- Developed scripts to test modifications to shader compiler
- Wrote and modified test cases to match new language specifications
- Determined sources of bugs in shader compiler

## RESEARCH EXPERIENCE

### **International Supercomputing Competitions**

*Student Cluster Engineer*

**Boston, MA**

July 2015 - Present

- Compete in international student cluster competitions
- Learn about high performance hardware and optimize configurations for applications (e.g. High Performance Linpack) on experimental systems
- Make decisions about hardware selection and software stacks to use
- Ingest application-specific details to make source code modifications
- Broke the competition record for one benchmark application at ISC 2017

### **Computer Architecture Research Lab**

*Undergraduate Research Assistant*

**Boston, MA**

May 2015 - May 2016

- Developed Android application and executables for side channel analysis of mobile device chipsets
- Presented findings at Research, Innovation, and Scholarship Expo at Northeastern
- Expanded Android application for simplified GPU benchmarking, porting a benchmark suite designed for heterogeneous computing architectures

## SKILLS AND ACTIVITIES

*Proficient Languages:* C++, C, Python, Java

*Familiar Languages:* MIPS Assembly, SystemVerilog, JavaScript, HTML, CSS, XML

*Major Related:* AIAA - Software Team, NEU 2017 Hackathon, MakeBU 2015 Hackathon

*Volunteering:* Husky Ambassadors, Hostelling International, Generation Citizen