# Zachary Marcus

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**Available for computer engineering internship positions for January - June 2018**

## EDUCATION

**Northeastern University** **Boston, MA**
Candidate for Bachelor of Science in Computer Engineering and Computer Science
*GPA:* 3.84 | *Graduation Date:* May 2019
*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

## WORK EXPERIENCE

**MIT Lincoln Laboratory** **Lexington, MA**
Software Engineering Co-op January 2017 - September 2017
- Maintain DoD secret clearance
- 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
- Designed data collection framework in Python to gather gigabytes of data in the form of news articles
- Leveraged TensorFlow and image processing libraries to place second in fake news detection hackathon

**Advanced Micro Devices (AMD)** **Boxborough, MA**
Software Engineering Co-op 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** **Boston, MA**
Northeastern University Competitor July 2015 - Present
- Broke the competition record for Linpack at ISC 2017 in Frankfurt, Germany
- Gain valuable experience in high performance hardware and optimize configurations for applications (e.g. the LAMMPS Molecular Dynamics Simulator) on experimental systems
- Make critical decisions about hardware and software stacks to use
- Analyze application-specific performance characteristics to make source code modifications

**Computer Architecture Research Lab** **Boston, MA**
Undergraduate Research Assistant 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
*Development Skills:* Git, SVN, Perforce, Linux, Windows
*Technical Experience:* MPI, OpenMP, Embedded C, OpenCL
*Clubs and Activities:* Planetary Lander Developer, IEEE Webmaster, NEU Hardware Hackathon (1st), MakeBU Hackathon (1st), Pavlok Hardware Hackathon (2nd)
*Volunteering:* Husky Ambassadors, Hostelling International, Generation Citizen