Zachary Marcus

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Available for computer engineering internship positions 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; placed 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
- Interfaced 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
- Gained valuable experience in high performance hardware and optimize configurations for applications (e.g., the LAMMPS Molecular Dynamics Simulator) on experimental systems
- Made critical decisions about hardware and software stacks to use
- Analyzed 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 Tools: 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)
Volunteer Work: Husky Ambassadors, Hostelling International, Generation Citizen