Spencer Hance

(203) 240-8072 • shance@ece.neu.edu • www.shance.me
Availability: January-July 2018

Education

Northeastern University **Boston, MA**
Bachelor of Science, ***Computer Engineering*** *May 2019*

- IEEE (**Treasurer Fall'16, Fall'17**)
- Beta Gamma Epsilon Engineering Fraternity (**Vice President Fall'17**)

Relevant Coursework

- High Performance Computing (**PThreads, OpenMP, OpenMPI, CUDA**), Software Security, Networks, Computer Systems (**x86**), Algorithms (**C++**), Digital Logic Design (**Verilog, FPGA, MIPS**), Embedded Design (**C, FPGA**)

Relevant Experience

Advanced Micro Devices (AMD) **Boxborough, MA**
GPU Architecture Co-op *January – July 2017*

- Researched new GPU cache designs and presented at internal innovation expo
- Contributed to cache simulator (**C++**) and gained 3x speedup on runtime
- Designed simulation framework (**Bash, Python**) to run and analyze large-scale experiments on LSF cluster
- Implemented unit testing framework and increased code coverage

EnerNOC **Boston, MA**
Performance Engineering Co-op *January – December 2016*

- Created automated tests to measure web-application performance using JMeter and LoadRunner
- Ported a core algorithm to **Python/OpenCL** and gained a 7x speedup
- Developed a **MEAN.js** application to generate and load test data from Hadoop cluster
- Implemented status pages to monitor production services

NU Computer Architecture Research Group **Boston, MA**
Undergraduate Researcher *October 2014 – Present*

- **International Supercomputing Competitions (SC'15, SC'16, ISC'17, SC'17)**
  - Achieved the competition record of the HPCG benchmark at ISC'17
  - Evaluated performance of scientific applications and optimized them for the system
  - Troubleshooted the High Performance Computing software stack
  - Won the "MacGyver Award" for sourcing and building an HPC cluster in 6 hours
- **Multi2Sim Heterogeneous System Simulator**
  - Ported over 15,000 lines of **C** to **C++** for a full application rewrite
  - Developed unit tests with Google Test for automated code validation
  - Analyzed x86 application patterns with Valgrind for more efficient simulation
- **Fault Injection Tool**
  - Developed a bash tool to run massive GPU fault injection simulations for reliability studies
  - Utilized **Python** and SQLite3 to analyze simulation results

Technical Skills

Languages: Python (Pandas, NumPy, Matplotlib), C(++), Bash, Verilog, JavaScript (MEAN.js)

Technologies: Linux, HPC Concepts, LaTeX, Git, Perforce, GDB, LSF, Splunk, JMeter

Certifications: CompTIA A+ Technician