Spencer Hance

(203) 240-8072 • hance.s@husky.neu.edu • www.shance.me
Available to start January 2019

Education

Northeastern University **Boston, MA**
Bachelor of Science, ***Computer Engineering*** *December 2018*
- IEEE (**Treasurer Fall'16, Fall'17**)
- Beta Gamma Epsilon Engineering Fraternity (**Vice President Fall'17**)

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

Work Experience

edX **Cambridge, MA**
Software Engineering Intern *May 2018 – Present*
- Developing full-stack microservices for the edX open-source learning platform **(Python, Django, React)**

MIT Lincoln Laboratory **Cambridge, MA**
Technical Assistant - Machine Learning *October 2017 – May 2018*
- Implemented and documented graph-based machine learning pipeline **(Python, Anaconda, SLURM)**

Advanced Micro Devices (AMD) **Boxborough, MA**
Research Engineer Co-op - CPU Architecture *January – April 2018*
- Developed instrumentation and trace-driven tools **(C++)** to research data prefetching of HPC/Exascale workloads
- Created **IPython** notebooks for analysis and visualization of results from thousands of traces

Advanced Micro Devices (AMD) **Boxborough, MA**
Design Engineer Co-op - GPU Architecture *January – July 2017*
- Researched new GPU compressed cache designs and presented work at internal innovation expo
- Co-developed cache simulator (**C++**) and decreased simulator runtime by 300%
- Designed simulation framework (**Bash, Python**) to run and analyze large-scale experiments on LSF cluster

EnerNOC **Boston, MA**
Performance Engineering Co-op *January – December 2016*
- Created automated tests to measure web-application performance **(JMeter, LoadRunner, Jenkins, AWS)**
- Ported a proprietary algorithm at company hackathon to **Python/OpenCL** and gained a 7x speedup
- Wrote a **MEAN.js/JavaScript** application to generate and load test data from Hadoop cluster

Research Experience

NU Computer Architecture Research Group **Boston, MA**
Undergraduate Researcher *October 2014 – Present*
- Contributed significantly to **open-source** Multi2Sim CPU-GPU simulator for **C** to **C++** rewrite
- Designed a tool **(Bash, Python, SQLite3)** to run many parallel fault-injection simulations on a SLURM cluster

International Supercomputing Competitions (SC'15, SC'16, ISC'17, SC'17) **Boston, MA**
Application Lead *July 2015 – November 2017*
- Designed/built four clusters and optimized scientific applications for them
- Achieved the competition record of the HPCG benchmark at ISC'17 in Frankfurt, Germany
- Won the "MacGyver Award" for building an HPC cluster from components on the show floor

Technical Skills

Languages: Python, C(++), Bash

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