Joseph Voss

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EDUCATION

Bachelor of Science, Mechanical Engineering, University of Texas at Austin — Aug 2014 – May 2018

Related Courses

Advanced Mechatronics II, Parallel Computing, Programming and Engineering Computational Methods, Heat Transfer, Engineering Vibrations, Machine Elements, Material Engineering, Fluid Mechanics, Thermodynamics, Solids, Statics, Engineering Design and Graphics, Differential Equations, Matrices and Matrix Calculations, Engineer Statistics, Engineering Communication

Study Abroad, IES Abroad: Vienna, Austria — May 2015 – Jun 2015

EXPERIENCE

Texas Advanced Computing Center

- Student Intern, High Performance Computing — Jul 2017 – Aug 2017
  - Developed an automated HPC testing harness using Jenkins, PyTest, and CMake that integrates seamlessly with SLURM
  - Created a heatmap visualization using Bokeh, showing degredation and improvement in system performance
  - Submitted a research paper describing the test harness developed to the HPC System Professionals Workshop at Supercomputing Conference 17.
- Team Member, Student Cluster Competition — Feb 2016 – Mar 2017
  - Designed, built and managed a cluster of high performance compute nodes
  - Developed remote power monitoring system using SNMP, Graphite, and Grafana
  - Learned how to use and profile several HPC applications
  - Attended Supercomputing Conference 2016 to compete with student teams from around the world, placed 4th overall
  - Published a reproducibility study to the Parallel Computing journal.

Trident Research LLC

- Mechanical Engineer Intern — Jun 2016 – Aug 2016
  - Designed and assembled charging system for naval buoys
  - Created drawings and 3D models in Solidworks of custom parts
  - Wrote embedded firmware for safe charging of buoys
  - Completed acceptance testing for both custom and COTS parts
  - Wrote and updated documentation of the naval buoy system

Applied Research Laboratory

- Student Technician, Space and Geophysics Lab — Jul 2015 – Aug 2015
  - Redesigned the method of reading/writing out RINEX files to use the OOP principle of encapsulation
  - Updated the in-house code base to use the new RINEX objects for file I/O
  - Extensive cataloging of the applications within the in-house code-base
- Student Technician, Space and Geophysics Lab — Jan 2015 – May 2015
  - Created a suite of cross-compatible unit tests in C++
  - Helped develop in-house testing framework
  - Wrote documentation for how later unit testing should be executed
- Science and Engineering Apprentice, Space and Geophysics Lab — May 2014 – Aug 2014
  - Developed an inexpensive COTS GPS data collection platform using Python
  - Wrote software capable of decoding binary streams, translating them to the floating point representation, and writing out to formatted RINEX file
  - Interfaced with GPS receiver mounted on a DIP via serial communication

SKILLS

Solidworks, C++, Python, Git, Bash, CMake, Jenkins, Linux management & development, Soldering, MATLAB, LaTeX, Microsoft Word, Microsoft Excel, Basic machining and assembly experience.

PUBLICATIONS

Voss, J., Garcia, J. A., Proctor, W. C., & Evans, R. T. (Submitted). Automated System Health and Performance Benchmarking Platform. In *Supercomputing Conference '17: Proceedings of the 2nd international HPC System Professionals Workshop at SC'17*. New York, NY, USA: ACM.

Ababao, R., Garcia, J. A., Voss, J., Proctor, W. C., & Evans, R. T. (2017). "Student Cluster Competition 2016 reproducibility challenge: Genomic partitioning with ParConnect." *Parallel Computing.* https://doi.org/10.1016/j.parco.2017.07.002

PROFESSIONAL ACHIEVEMENTS

Terry Foundation Scholar — 2014– Current
Eagle Scout, Troop 3 — 2012
Presidential Achievement Scholar — 2014– Current