

Joseph Voss

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EDUCATION

Bachelors of Science, Mechanical Engineering
The University of Texas at Austin

Aug 2014 - May 2018

SKILLS

Python, Puppet, Golang, Openshift, Bash, Git, C++, Jenkins, Linux management & development, \LaTeX

EXPERIENCE

HPC Systems Engineer, Oak Ridge National Laboratory

Jun 2018 – Present

- Wrote custom tool to boot HPC machines from container images. Transitioned several large scale systems to use it.
- Developed eBPF wrapper to compile and load Linux kernel profiling programs and output data to Kafka.
- Created Helm charts and automated pipelines to move system services to Kubernetes.
- Developed CI pipeline to stage Puppet changes on bare metal servers
- Reviewed proposals for new HPC Systems. Assisted in their provisioning and deployment.
- Extended Let's Encrypt Golang projects to create in-house certificate issuer for host authentication bootstrapping.
- Managed 500 node HPC post processing cluster in transition to Slurm and GPFS.
- Used Puppet to configure and manage large scale systems.
- Contributed to open source projects to improve system health and monitoring.
- TLDR; Leveraged Puppet, Golang, Python, and Kubernetes to simplify management of HPC systems

DevOps Engineer, MultiMechanics

Jan 2018 – May 2018

- Created automated build system using Vagrant. Converting software tools from Windows to Redhat and SUSE
- Configured and installed pbs-pro job scheduler to better share computing resources. Lead training on it's usage.

Student Intern, Texas Advanced Computing Center

Feb 2016– Aug 2017

- Developed an automated HPC testing harness using Jenkins, PyTest, and CMake that integrates with Slurm
- Created a heatmap visualization showing historical degradation and improvement in system performance
- Designed, built and managed a cluster of high performance compute nodes for the Student Cluster Competition
- Developed remote power monitoring system using SNMP, Graphite, and Grafana
- Attended Supercomputing Conference 2016 to compete with student teams from around the world, placed 4th overall

Science and Engineering Apprentice, Applied Research Laboratory

May 2014 – Aug 2015

- Created a suite of cross-compatible unit tests in C++ for open source software
- Redesigned the method of reading/writing out RINEX files to use OOP encapsulation
- Developed an inexpensive COTS GPS data collection platform using Python; decodes binary streams and writes out to a formatted RINEX file

PUBLICATIONS

Voss, J., Garcia, J. A., Proctor, W. C., & Evans, R. T. (2017). "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. <https://doi.acm.org/10.1145/3155105.3155106>

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>