Charles McEachern

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Skills

Languages Bash, C/C++, Fortran, Python, some experience with HTML/CSS and JavaScript

Tools Elasticsearch, Git, Jenkins/Docker, Linux, Matplotlib, MPI/OpenMP, RPMs

Experience

Cray Inc **Bloomington, MN**
System Test Engineer *2016–Present*

- Developed an API for control and testing of the Cray XC liquid cooling system. Diagnosed bugs that, if released, would have cost millions of dollars in waste and damage.
- Built an end-to-end Jenkins pipeline to automatically compile, test, package, and distribute on commit. Facilitated the retirement of a 20-year tangle of VMs, cron jobs, and hotfixes.
- Designed and implemented a plugin-based Python module for analysis of supercomputer system logs. Processed terrabytes of text to isolate intermittent hardware faults.
- Administered boots and upgrades for a 200-node Cray XC mainframe. Supported bizarre hardware and software configurations to maximize test coverage for a team of 20 engineers.

Cray Inc **St Paul, MN**
Performance Intern *2014–2015*

- Created a parallel harness to run nightly tests against Cray's performance analysis tools. Filed detailed bugs against Cray, Gnu, and Intel compilers.
- Automated environment configuration, multi-language source code generation, and performance report parsing. Increased unit test code coverage dramatically.
- Tailored test cases to the needs of the performance tools team. Responded promptly to feedback.

University of Minnesota Physics Department **Minneapolis, MN**
Graduate Student *2009–2016*

- Optimized a model of near-Earth electromagnetic waves. Analyzed hundreds of gigabytes of data to identify novel patterns. Presented results via posters, papers, and workshops.
- Led laboratory exercises and tutored at-risk students individually. Communicated detailed concepts to audiences with varied technical backgrounds.
- Coordinated between professors, graduate teaching assistants, and undergraduate tutors as Head TA. Coached new team members to improve student outcomes.

Education

University of Minnesota **Minneapolis, MN**
PhD, Space Physics, Burlaga/Arctowski Medal Fellow *2009–2016*

St Olaf College **Northfield, MN**
BA, Math (Distinction), Physics (Distinction), Magna Cum Laude *2005–2009*