

Charles McEachern

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Summary

Ten years experience using Python for automation and analysis. Fluent in Linux and shell scripting. Recent emphasis on CI/CD infrastructure with Groovy, Jenkins, and Docker. Comfortable mentoring interns, onboarding employees, and creating educational materials for new technologies.

Experience

Software Engineer, Cray Inc

2016–Present

- Built a **CI/CD** pipeline using **Groovy**, **Docker**, and **shell** scripts. Automatically compiled, tested, and distributed **RPMs** on commit in support of 20 engineers.
- Triggered **Jenkins** builds via **REST API**. Monitored the queue and throttled job submissions to run 50 multithreaded jobs without stalling a standalone build server.
- Implemented a **Python** API for access and analysis of mainframe system logs. Parsed terabytes of text to diagnose hardware failures on a \$70 million customer installation.
- Mentored two interns, both of whom were awarded extensions. Prepared and presented educational materials to onboard dozens of new employees.

Performance Intern, Cray Inc

2014–2015

- Deployed a parallel **Python** harness to run nightly tests against Cray’s performance analysis tools. Filed detailed bugs against Cray, Gnu, and Intel compilers.
- Automated **shell** environment configuration, **C++** and **Fortran** source code generation, and performance report parsing. Increased test code coverage dramatically.

PhD Candidate, University of Minnesota

2009–2016

- Benchmarked and optimized a wave simulation in parallel **Fortran**. Implemented a **Python** harness to configure, compile, and launch hundreds of variations at once.
- Analyzed and visualized hundreds of gigabytes of data with **Numpy** and **Matplotlib** to identify novel patterns. Presented methods and results via posters, papers, and workshops.
- Led laboratory exercises and tutored at-risk students individually. Coordinated between professors, graduate teaching assistants, and undergraduate tutors as Head TA.

Education

PhD, University of Minnesota

2009–2016

- Space physics, Burlaga/Arctowski Medal Fellow

BA, St Olaf College

2005–2009

- Math (Distinction), Physics (Distinction), Magna Cum Laude