

# Robert L. Jefferson

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## Professional Experience

- **Comcast**

*Engineer 4 (Cloud Engineer)*

**Philadelphia, PA**

*September 2017 – Present*

- Developing tools in Python to provide insight into decentralized OpenStack clusters (for example: capacity, project, and quota management)
- Write and maintain deployment processes for Concourse, Kubernetes, and Docker to deploy tools to development and production environments
- Serve as liaison between the Comcast OpenStack community and internal application development groups using private cloud services
- Act as the *de facto* resource for internal customers wishing to use our monitoring systems, and to explore others
- Worked with monitoring vendor to improve OpenStack data collection, from hours per cluster to seconds

- **Comcast** (as a contractor for Yoh)

*Engineer 3 (Site Reliability Engineer)*

**Philadelphia, PA**

*December 2015 – September 2017*

- Developed tools and strategies for deploying multiple large-scale OpenStack clusters (approx. 200 compute nodes each) in both development and production environments
- Provided support for tenants in existing OpenStack clusters
- Crafted tests using Rally and ServerSpec for CI/CD of OpenStack clusters
- Created playbooks for troubleshooting and resolving common issues with production OpenStack installations
- Developed a proof of concept for an automated testing framework of Puppet 3 and 4 modules using Test Kitchen, Vagrant, and OpenStack
- Created a suite of troubleshooting and analysis programs to classify problems with groups of hundreds or thousands of Puppet nodes

- **Solutions for Progress**

*Software Engineer I/II*

**Philadelphia, PA**

*October 2012 – December 2015*

- Developed proofs of concepts and deployed implementations for integrating modern technologies (*e.g.*, CouchDB, D3.js/Rickshaw, Backbone.js) into a primarily Perl-based web application
- Managed regular builds and releases for The Benefit Bank and other company products
- Added geocoding and spreadsheet upload/processing features to a Django-based website for an anti-hunger organization
- Worked as part of a team designing and developing a Django-based re-implementation of a financial literacy and budget coaching service
- Built deployment and maintenance tools, including a build and release management system, for Django projects using Fabric
- Developed a set of strategies from moving the codebase from Subversion to Git, including rewrites of build and deployment tools, development of user education strategies, and writing documentation

*Research Associate to the CEO*

*January 2011 – October 2012*

- Served as principal researcher for the CEO on a variety of social enterprise projects
- Developed economic models, detailed business plans, and proposals examining the scientific and economic viability of a high-tech indoor urban farm
- Wrote a set of research reports and briefs on a range of topics in insurance, tax policy, health care, education, environmental policy, and sustainable technology
- Performed feasibility studies and constructed models on oil recycling systems
- Examined the potential economic impact of changes in the number of persons receiving state and federal benefits (*e.g.*, SNAP, Medicaid, EITC)

- **Heinz College, Carnegie Mellon**

*Research Assistant*

**Pittsburgh, PA**

*January 2007 – May 2008*

- Wrote code in Stata to aid in a research project examining explanatory factors in historical immigration restriction laws
- Collected data and reconciled errors and uncertainties in historical United States Census data
- Won “Best Tepper Senior Honors Thesis in Economics” award from research started as an assistant

- **Tepper School of Business, Carnegie Mellon**

*Teaching Assistant/Tutor*

**Pittsburgh, PA**

*January 2007 – May 2008*

- Served as the lead teaching assistant and point of contact for a 300-student principles of economics course
- Taught weekly recitation sections, held office hours, and graded homework, projects, and exams for courses on econometrics, economic modeling, and the history of economic thought
- Wrote and delivered occasional lectures on the history of economic thought and econometrics

## Education

- **Northwestern University**

*Doctoral program, Economics*

**Evanston, IL**

*2008 – 2010*

- Coursework in microeconomics, econometrics, statistics, and real analysis
- Focus on economic history and urban economics

- **Carnegie Mellon University**

*BS, Economics*

**Pittsburgh, PA**

*1997 – 1999; 2004 – 2008*

- Senior Thesis: *Anti-Foreign Sentiment in the California Gold Rush*
  - \* Winner, “Best Tepper Senior Honors Thesis in Economics”
- Coursework in game theory, economics of education, computer science, theory of measurement, mathematical analysis, economic history, urban history, and probability
- Activities: Economic Society, WRCT (served as music director)

## Skills

**Languages:** Python, JavaScript, Perl, SQL, Ruby, shell scripting (bash and zsh)

**Cloud Technologies:** OpenStack, Docker, Kubernetes, OpenShift

**Web Frameworks:** Django, Flask

**Deployment** Ansible, Terraform, Puppet, Fabric

**Design and Typesetting Languages:** L<sup>A</sup>T<sub>E</sub>X, HTML, CSS, PostScript

**Mathematical Software:** R, Julia, NumPy, Stata, SAS

**Databases:** PostgreSQL, MariaDB/MySQL, CouchDB, SQLite, Redis

**Other:**

- Economic and statistical modeling
- Build and release management
- Automated application deployment
- Design and maintenance of complex spreadsheets
- Writing research reports, business plans, memos, and software/process documentation
- Explorations in programming in Rust and APL
- Project management