Rob Jefferson

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Professional Experience

- **Comcast** **Philadelphia, PA**

  Engineer 4 (Cloud Engineer) *September 2017 – Present*

  - Developed tools in Python to provide insight into decentralized OpenStack clusters (for example: capacity, project, and quota management)
  - Contributing to software tools in Go for automating security rules in the hybrid cloud
  - Developed tools for running automated tests for OpenStack performance to check against SLOs and SLAs
  - Wrote and maintained deployment processes for Concourse, Kubernetes, and Docker for development and production environments
  - Served as liaison between the Comcast OpenStack community and internal application development groups using private cloud services
  - Served 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) **Philadelphia, PA**

  Engineer 3 (Site Reliability Engineer) *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** **Philadelphia, PA**

  Software Engineer I/II *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 processes for 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** **Pittsburgh, PA**
  Research Assistant *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 for research started as an assistant

Talks

- *Adventures in Running a Private Cloud.* Delivered at Dash 2019, July 17, 2019.
- *What Developers and Economists Can Learn from Each Other!* Delivered at !!Con 2016, May 8, 2016.

Education

- **Northwestern University** **Evanston, IL**
  Doctoral program, Economics *2008 – 2010*
    - Coursework in microeconomics, econometrics, statistics, and real analysis
    - Focus on economic history and urban economics

- **Carnegie Mellon University** **Pittsburgh, PA**
  BS, Economics *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, Go, JavaScript, SQL, Ruby, shell scripting (`bash` and `zsh`)
Cloud Technologies: OpenStack, Docker, Kubernetes, OpenShift, VMWare ESXi
Web Frameworks: Flask, Spring Boot, Django
Deployment: Ansible, Terraform, Puppet, Fabric
Mathematical Software: R, Julia, NumPy, Stata, SAS
Databases: PostgreSQL, MariaDB/MySQL, CouchDB, SQLite, Redis
Other:
- Economic and statistical modeling
- Build and release management
- Continuous integration/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