

# Rob Jefferson

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## Professional Experience

- **Cisco** **Remote**  
*Cloud Engineer* *April 2021-Present*
    - Work as part of a team developing a containers-as-a-service (CaaS) platform for internal customers, using AWS, OpenStack, Cluster API, and Kubernetes
    - Serve as primary and secondary on-call support as part of 24x7 coverage
    - Develop lower-level monitoring and observability strategies for the OpenStack/Cluster API subsystems
    - Develop and enhance internal tools for development and staging
    - Write and maintain documentation for OpenStack and monitoring
  - **Comcast** **Philadelphia, PA**  
*Engineer 4 (Cloud Engineer)* *September 2017 – April 2021*
    - 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)

## 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*
  - Coursework in game theory, economics of education, theory of measurement, mathematical analysis, economic history, urban history, and probability
  - Activities: Economic Society, WRCT (DJ, Music Director)

## Skills

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

**Cloud Technologies:** OpenStack, AWS, Docker, Kubernetes, OpenShift, VMWare ESXi

**Web Frameworks:** Flask, Django

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

**Mathematical Software:** NumPy/Pandas, Julia, GLPK, R

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

**Other:**

- 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 Rust and APL
- Project management
- Economic and statistical modeling