

# NELS NELSON

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## OBJECTIVE

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I will settle for nothing less than an advanced software engineering position that demands the most of my expertise and knowledge and inspires me to learn and perform at my best.

## COMPUTER SKILLS

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- I have been a professional software developer for 14 years.
- Programming languages highest expertise first: Ruby/JRuby, Python, JavaScript (ECMAScript), HTML, Java/Groovy, Bash, and of course C/C++ and a little bit of Perl and Go.
- Five years professional Python programming experience.
- Four years professional Ruby programming experience.
- Eight years Java programming experience at a professional level.
- One year professional Go programming experience.
- One year professional node.js programming experience.
- Twelve years of professional and academic experience using SQL (mostly PostgreSQL) and high-level database administration for the respective server technologies.
- Four years professional experience with NoSQL persistence technologies like MongoDB, and caching technologies like Redis and memcached.
- Three years professional experience using Elasticsearch, Logstash, and Kibana.
- Two years professional experience with message broker technologies like RabbitMQ and Apache ActiveMQ.
- Two years professional experience with containerized deployment configuration software systems such as Docker.
- Two years professional experience using deployment configuration automation software such as Ansible.
- One year professional experience using virtual infrastructure orchestration tooling like Terraform.
- Fourteen years of professional experience using version control software such as CVS, SVN and git, using tools like GitLab, Bitbucket, and GitHub.
- Five years of professional experience using project management software such as MKS and Jira to manage and track multiple software engineering projects simultaneously.
- One year professional experience developing Selenium frontend integration and functional tests, and configuring jenkins jobs for running Selenium driver docker container instances for marionetting remote headless browsers.
- Four years of professional experience working on several projects using the Agile software development methodology.
- Six years professional experience developing enterprise web service applications.
- Two years professional experience operating, configuring, deploying, and using OpenStack virtualization components and environments.
- Five years of professional experience managing, configuring, and deploying web application server software to Java EE platforms like Tomcat and JBoss.
- Five years professional experience managing, configuring, and deploying web application server software to Ruby and Python platforms like Passenger Phusion, uwsgi, and mod\_python.

- Several years of in-depth experience using and administering a variety of operating systems including Windows NT/2000/XP/10, MacOS 7.x-9.x and OS X, UNIX systems such as FreeBSD and OpenBSD, and Linux flavors such as RedHat, Ubuntu, Debian, Gentoo and Fedora Core.
- Professional experience administering web servers in load-balanced clustered configurations.
- In-depth knowledge of network security and intrusion detection.

## PROFESSIONAL PROJECTS

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- Implemented build and quality control pipelines for all Rackspace Public Cloud operating system base images.
- Architected and coded full stack internal customer infrastructure management event messaging and notification relay API system using Python which integrated with fan-out capabilities for multiple internal and external message services. CI/CD, QA, and Python API client library distribution pipelines included.
- Implemented a dashboard web application in Python Flask to track and forecast capacity for Cloud infrastructure at Rackspace.
- Implemented a capacity metrics data pipeline for Rackspace using Elasticsearch and logstash, sourced from OpenStack Nova Cell Manager.
- Researched and developed prototype Docker Containers as a Service based on Libvirt, LXC, and OpenStack for Rackspace.
- Researched and developed a security testing suite for Containers for Rackspace to harden a public-facing surface against multiple attack vectors.
- Implemented multiple Cloud resource management software projects for infrastructure status tracking and analysis at Rackspace.
- Implemented a redesign of the mobile device version of Rackspace's flagship control panel MyRackspace web application.
- Developed a generalized API layer for HTTP connections used by the MyRackspace customer portal for RESTful web service integration with internal systems. This helped to reduce overall system resource demands of each Tomcat instance.
- Improved the responsiveness of customer-facing enterprise permissions system control panel page loads by multiple orders of magnitude.
- Implemented multiple legacy support features and automated migration procedures for Slicehost.com XenServer-based virtualization at Rackspace.
- Maintained and improved legacy Slicehost.com virtualization automation software for Rackspace -- supporting migration of customer assets to OpenStack infrastructure.
- Developed an enterprise bandwidth monitoring and tracking solution for Rackspace using NetFlow and flow-tools as well as the reporting software and Ruby on Rails based web-application for exporting reports as RESTful resources for data warehousing.
- Developed a Ruby on Rails web-application for the Human Resources employee review system at Rackspace.
- Migrated an enterprise control panel web-application with 12,000 daily users from Java to Groovy. This involved refactoring over 85,000 lines of code.
- Refactored over 50,000 lines of Java code for a large data analysis desktop application under a contract with Syracuse Research Corporation.
- Developed web service integration systems using Python in the CORE system at Rackspace.
- Worked with a team to develop a service-oriented systems integration application using JBoss to integrate internal customer tracking and management systems with Salesforce.com for Rackspace.
- Saved Rackspace an estimated US \$450,000 in annual costs through consultation by analyzing marketing campaign tracking software and providing a workable solution.
- Analyzed and reconstructed build configurations using Apache Ant for all Java EE projects in the IT department at Rackspace.
- Developed, deployed and maintained several production web services using a variety of frameworks including Ruby on Rails, JBossWS and JAX-WS, and Restlet.
- Developed a Java application to migrate legacy data to new XML format spec using JAXB under a contract with Syracuse Research Corporation.

## PERSONAL PROJECTS

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- Wrote a network tool for Linux using libdnet and libpcap in C which analyzes and replays network communications saved in tcpdump format log files.
- Wrote a tiny API service for interrogating project versioning information. <https://github.com/nelsnelson/stardate>
- Developed a small Open Source Java library using JDK 1.5 to extend the functionality of the Java Swing API to facilitate quick and easy development of full-featured modern desktop applications.
- Wrote an Open Source light-weight servlet container in Java based on the Apache HttpComponents Core project being lead by Oleg Kalnichevski.
- Wrote a WebSocket server in JRuby based on Netty NIO server. <https://gitlab.com/nelsnelson/websocket-server-jruby>
- Wrote a CLI Jabber client in JRuby capable of securely connecting to Google Talk's Jabber network, Facebook, and other local Jabber networks.
- Developed an experimental web application using Ruby Sinatra to present YouTube videos in a playlist format. Demonstrates some of my experience with AJAX technology, YouTube's feed search API, Amazon.com's Product Advertising API, Ruby's Sinatra web application framework, and John Resig's JQuery. Demo at <https://feedio.io/>.
- Developed a modernized take on an old-fashioned text-based multi-user game, library, and engine in JRuby. Using Netty NIO server for asynchronous connection handling and my Ruby port of Graham Nelson's Inform parser for command parsing. Demo at <https://werjen.com/>.
- Wrote a javascript Jabber web-client app served from my websocket server.

## WORK EXPERIENCE

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- 2006-2019 Rackspace, Inc. San Antonio, Texas Austin, Texas IT/CORE, Customer Portal, OpenStack Public Cloud Product Research and Development, Slicehost, OpenStack Public Cloud Development and Operations Software Engineer Developer Site Reliability Engineer
- 2004-2006 Syracuse Research Corporation Branch office in San Antonio, Texas Software Engineer
- 2000-2005 Regianno's Italian Panificio San Antonio, Texas Waiter

## EDUCATION

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- University of Texas at San Antonio Bachelor of Science degree in Computer Science Graduated 2004
- University of Texas at San Antonio Master of Science degree in Computer Science Pursued 2006

## VOLUNTEER WORK

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- 2013, 2014 Hack for Change Hackathon St. Edwards University Austin, Texas Contributor/Programmer
- 2017 American Progressive Party Contributor/Website Administrator

## TRANSFERABLE SKILLS

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- Will easily adapt to new systems, software, conventions, and technology.
- Professionally trained in both the Agile and Rational Unified Process software development frameworks.
- I enjoy working with intelligent, kind people, and I welcome curiosity, discussing ideas, and novel ways of thinking. I thrive and excel as a member of a cooperative team and will also work well independently.
- Determination, tenacity, and concentration enable my delivery of results.

References available upon request