# Nik Ogura

### Principal Engineer

*Platform - Tools - Infrastructure - Security*

### San Francisco, CA

#### *Aut viam inveniam, aut faciam.*

*(If I cannot find a way, I will make one)*

*– Hannibal of Carthage, when told there was no way he was bringing elephants through the Alps.*

# Interesting Accomplishments

#### Stitch Fix Algorithms Access and Identity System

It was the means by which the entire department of data scientists and engineers connected to every system, instance, and container in the tech stack. Virtual machines, containers, in the cloud, locally. One single, unified, independent access system.

*Components:* **OpenLDAP**, **OpenVPN**, **OpenSSH**, **SSSD**, **PAM**, **Python**, **Go**

#### Self-Updating Signed Binary Tool Distribution and Execution Framework

It’s used for distributing and running signed binaries on user laptops, in cloud instances and docker containers. It’s always up to date, works on and offline, and best of all it *just works*.

*Components:* **Go** **Artifactory** **OpenPGP**

#### Apple Pay’s Test-Driven Cloud-Based CI/CD Pipeline

*Components:* **Chef**, **Java**, **Spring**, **Maven**, **OpenStack**, **Python**, **Ruby**, **GitHub**, **TeamCity**

#### Application Stack Prototyping and Orchestration Suite

Basically I wrote ‘docker-compose’, before what we now know of as ‘docker-compose’ was totally stable.

*Components:* **Java**, **Python**, **OpenStack**, **Docker**, **Netscaler**, **HPNA**

#### Static Code Analysis Tools for Puppet Modules

There were no tools to do SCA of Puppet modules for GRC (Governance, Risk- Management, and Compliance). So I made some.

*Components:* **Java**, **Spring**, **Tomcat**, **Spring Security**, **Antlr**, **Ruby**, **GitHub**, **jQuery**, **Puppet**

#### US Bank’s Encryption Key Management and Delivery System

A PKI was purchased, and it didn’t do what we needed. The parts didn’t talk to each other. It couldn’t deliver the keys. Manual key management was not working.

*Components:* **Java**, **Spring MVC**, **Spring Security**, **jQuery**, **jQueryUI**, **BouncyCastle**, **Jackson**, **Apache Commons**, **StringTemplate**, **SQLite**, **ProtectApp**

#### Credit Card PAN Encryption and Tokenization System

It encrypted/decrypted and masked credit card numbers for a Merchant Acquiring systems (Credit Card Authorization and Settlement).

*Components:* **Perl**, **C**, **Java**

#### Hardened LAMP stacks for PCI Compliant Credit Card Processing Applications

*Components:* **Apache**, **Tomcat**, **Java**, **Perl**, **OpenSSL**, **libxml2**, **libxslt**, **MySQL**, **Git**, **Subversion**, **ModSecurity**, **ModAuthVAS**, **Kerberos**, **ModJk**

#### US Bank’s Web Application Firewalls

I’ve designed, implemented, and maintained Web Application Firewalls for cross platform applications, some directly handling credit card PAN data.

*Components:* **Apache**, **ModSecurity**, **OWASP ModSecurity Core Ruleset**

#### Brought a Whole Business Line’s Tech Stack into PCI Compliance

I participated in creating and executing a plan to bring a multi- million dollar business line centered around credit card processing systems from zero to PCI 2.0 compliant in < 12 months. Can do it again too.

# Profiles

*Home Page* <http://nikogura.com>

*Code Repos* <https://github.com/nikogura>

*LinkedIn* [https://www.linkedin.com/in/nikogura/](https://www.linkedin.com/in/nikogura)

# Technical Background

*Programming Languages:* **Java**, **Ruby**, **Python**, **Groovy**, **JavaScript**, **C**, **C++**, **Perl**, **Go**, **Bash**

*Communication:* Educator for Best Practices, Test Driven Development, Application Security, Network Security, Penetration Testing. Instructor for Leadership, Public Speaking.

*Configuration Management:* **Chef**, **Puppet**, **Ansible**

*Operating Systems:* **RPM Linux Systems (RHEL, SLES, CentOS, Oracle Linux)**, **Debian Linux Systems (Debian, Ubuntu)**, **Arch Linux**, **Android**, **MacOS**

*System Administration:* **Physical Machines**, **Virtual Machines**, **Containers**, **Clouds**, **Workstations**, **TCP/IP Networks**, **Routers**, **Switches**, **Firewalls**

*Web Servers & Application Containers:* **Apache HTTPD**, **Tomcat**, **ModPerl**, **Nginx**, **HaProxy**, **Gunicorn**

*Testing:* **jUnit**, **TestNG**, **Selenium**, **Test::More**, **Rspec**, **ServerSpec**, **Inspec**, **unittest**, **go test**

*CI Systems:* **Jenkins**, **TeamCity**, **CircleCI**, **Strider**

*Security:* **SSL**, **SSH**, **IPSec**, **PCI DSS**, **Spring Security**, **ModSecurity**, **Kerberos**

*Networks:* **IPTables**, **PF**, **BIND**, **DHCP**, **Dnsmasq**, **Sendmail**, **Postfix**, **CUPS**, **OpenLDAP**

*Version Control:* **Git**, **GitHub**, **GitLab**, **Subversion**, **Mercurial**

*Databases:* **MySQL**, **Oracle**, **SQLite**, **HSQL**, **MongoDB**, **Cassandra**, **Postgres**

*Build Tools:* **Make**, **Ant**, **Maven**, **Gradle**, **Archiva**, **Artifactory**, **Rake**

*Virtualization:* **VirtualBox**, **VMWare**, **Vagrant**, **Packer**, **Qemu**, **ESXi**, **vSphere**, **OpenStack**, **Docker**, **KVM**, **libvirt**

*SCA/ Language Tools:* **Antlr**, **RATS**

# Open Source Projects:

* [gomason](https://github.com/nikogura/gomason) A tool for doing clean-room CI testing locally.
* [Dynamic Binary Toolkit](https://github.com/nikogura/dbt) A framework for authoring and using self-updating signed binaries.
* [go-postgres-testdb](https://github.com/stitchfix/go-postgres-testdb) A library for managing ephemeral test databases.
* [python-ldap-test](https://github.com/zoldar/python-ldap-test) A testing tool Python implementing an ephemeral in-memory LDAP server
* [CGI::Lazy](http://search.cpan.org/~vayde/CGI-Lazy-1.10/lib/CGI/Lazy.pm) A Perl Web Development Framework.
* [Selenium4j](https://github.com/nextinterfaces/selenium4j) A Java Library for translating HTML format Selenium tests into JUnit4 at runtime.

# Professional History

#### Scribd - San Francisco, CA - DevOps Engineer - 2018 - Present

My mission is to Protect and Serve: Build security-critical infrastructure, lead incident response and partner with the wider Engineering org to promote a security culture at Scribd.

Security cannot be about saying ‘no’, or mindlessly checking items off a list. Ultimately, it’s about enablement- helping people do things faster, easier, and in ways they couldn’t do for themselves.

Giving out fish where needed, Teaching folks to fish whenever possible, then doing some serious fishing of my own.

I revel in a porous boundary between Sec / Dev / Ops that allows me to secure, advise, and build amazing solutions that not only work, but are object lessons in *doing it right*.

#### Stitch Fix Inc. - San Francisco, CA - Data Platform Engineer - 2017

* Created the Access and Identity systems whereby the Algorithms & Analytics department connects to every resource, instance and container in the stack.
* Enabled AWS IAM Role based development that works transparently on a laptop as if the computer were actually an EC2 node. Whether you’re local or in the cloud your code works exactly the same.
* Built a self- building, self-updating, extensible userspace binary tooling system that creates and distributes signed binaries for doing work on laptops with no external depenencies.

#### Apple iOS Systems - Cupertino, CA - Senior DevOps Engineer - 2015 ~ 2017

* Designed and built a dynamic test driven CI/CD pipeline for Apple Pay, Apple Sim, and every Apple device in the world.
* Implemented a private OpenStack cloud for testing and verification of applications.
* Designed a system whereby the entire deployment footprint of a group of applications can be described and manipulated in code.
* Transitioned the organization from Subversion to Git.

#### Data Recognition Corporation - Maple Grove, MN - Principal DevOps Engineer - 2014 ~ 2015

* Designed an auto scaling Continuous Delivery environment for educational testing.
* Shepherded multiple applications from proprietary systems to fully Open Source platforms.
* Designed and taught internal training curriculum for the technology, disciplines, and cultural concepts that come under the heading of DevOps.

#### Wells Fargo - Minneapolis, MN - Sr. Software Engineer - 2014

* DevOps Consultant for Development, Testing, Building and Delivery of Applications and Middleware.
* Module Developer for Continuous Integration/ Continuous Delivery of multiple applications across multiple technologies and multiple operating systems.
* Designed and built SCA tools to parse the Puppet DSL for GRC.

#### U.S. Bank - Minneapolis, MN - Application Systems Administrator Sr. 2007 ~ 2014

* Specialty Application Development- Projects too sensitive or specialized for a general development team, or things that were deemed ‘impossible’.
* Designed, built and implemented encryption key fullfillment system used by mulitple users in multiple countries.
* Designed, build, and maintained encryption and tokenization system for PAN data in Merchant Acquiring systems.
* Security Consultant for an Application Architecture team.
* Designed and Maintained full SDLC for High Availability PCI Compliant Apache Servers and LAMP Applications in multiple network tiers.
* Third level support of Web Applications, RHEL and SLES Servers, Oracle Databases, and IP Networks.
* Worked with Application Architecture teams and Development teams to preemptively address emerging threats while maintaining PCI DSS compliance across mixed technologies and multiple operating systems.
* Designed Monitoring and Alerting modules for High Availability Apache Servers (Custom Apache Modules).
* Full Stack Web Development on a variety of platforms.
* Presented internal courses/talks to business and technology teams on web communication and its dangers.
* Trained Development and QA personnel in methods and tools for Unit/ Integration testing.
* Designed IPSec and IPTables security profiles for protection of PAN data in PCI Enclaves.
* Designed and implemented processes for Code Signing, Continuous Integration, and Application Building.
* Consultant for Penetration Testing, Exploit Confirmation, and Proof of Remediation.
* Consultant/SME for SSL, SSH, Encryption, Public Key Infrastructure.
* Consultant/SME for Software Packaging, Build, Deployment.

#### Plain Black - Madison, WI - Developer - 2006~ 2007

* Provided online troubleshooting for supported customers.
* Core development on the WebGUI CMS

#### Universal Talkware - Minneapolis, MN - NOC Administer - 2000

* I handled internal tools development, built the NOC, and even supported the physical plant.

#### Hessian & McKasy - Minneapolis, MN - IT Administrator - 1999 ~ 2000

* I started out as the help desk, and ended up as the head of IT for a 40 seat Law Firm.

#### United Martial Arts - Plymouth MN - CEO and Head Instructor - 1998 ~ 2007

* Responsible for day to day operations of the martial arts studio, including management, financial planning, and personnel.
* Taught classes in Exercise, Wellness, Leadership, and the Martial Arts in the studio as well as for corporations and in the community.
* Designed, built and maintained a custom studio management desktop application that handled enrollment, financials, lesson plans, scheduling, video and print library management, and curriculum.
* Authored training curriculum for leadership programs as well as physical curriculum.