

Michael G. McGirr

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EDUCATION

Master of Science, Computer Science
Oregon State University 2015 September - 2018 March

Bachelor of Science, Computer Science
University of Oregon 2011 September - 2015 June

PROGRAMMING AREAS

DevOps tools: Terraform for provisioning AWS, Azure, and Google Cloud infrastructure. Packer (running builds via the AWS and Azure builders). HashiCorp Vault, Vagrant, Nomad, Nix, Kubernetes, Helm, Argo CD, Puppet, Docker, Logstash/Filebeat, Gitlab CI/CD, and Github CI Workflows.

Cloud provider experience:

- **AWS** - Experience working with highly available Autoscaling Groups set up behind App Gateways and Network Load Balancers. Network design and security in AWS. Extensive familiarity with EC2, VPC, IAM, S3, RDS, Route 53, SES, and others.
- **Azure** - Experience with Azure VNet's, Application Gateways, Network Load Balancers, VM Scale Sets (both Linux and Microsoft Server), VM init extensions, managed SQL servers, Active Directory, Azure Storage containers and blobs.
- **IBM Cloud** - Experience with IBM Cloud Kubernetes and the IBM Cloud Terraform provider.

Database: PostgreSQL, Microsoft SQL, MySQL. Sqitch for schema migrations.

Server: NGINX, Microsoft IIS. Experience with mail servers running Postfix and Dovecot. RESTful API design. Protobuf RPC services.

Main general purpose languages: Haskell, Haskell-like languages (Purescript, Idris), Rust.

Other languages: BASH, Powershell, Python

Markup/Web: HTML, CSS, Bootstrap, & L^AT_EX

Operating Systems: Debian, Ubuntu, CentOS, Microsoft Server, and NixOS.

PROFESSIONAL EXPERIENCE

Seqster - a SaaS-based healthcare technology company that enables organizations to drive efficient healthcare via comprehensive medical records (EHR), individual genomic profiles (DNA), and personal health device data August 2021 - Present
(Remote)

Senior DevOps Engineer (August 2021 - Present)

FP Complete - A Software Engineering and DevOps consulting company April 2018 - August 2021
(Remote)

Senior DevOps Engineer (March 2020 - August 2021)

- Manage and mentor three engineers (with various levels of technical expertise) on the FP Complete team.
- Project lead on the work for a video hosting client where the product centered around high-speed file transfers and cloud-based media management.
 - Created the Kubernetes setup for the client. The cluster architecture used HorizontalPodAutoscaler and cluster-autoscaler in order to auto-scale to handle surges in video uploads.
 - Planned and implemented Github Actions based CI/CD for deployments to the clusters
- Improved the Haskell code base of an automated SMS messaging service company.
 - This included work with Apache Kafka, RabbitMQ, and Twilio for SMS.
 - Bug fixes and improvements to their existing code base.
 - Helped add a protobuf based RPC services between software components in their stack.
- Wrote a Rust-based CLI tool for a Kubernetes cluster project.
 - The CLI tool provided a way for users to perform kubectrl CLI actions on the cluster, receive temporary AWS credentials, interact with the a federated OpenID Connect login provider on the cluster, as well as other Kubernetes related tasks.

Software Engineer (April 2018 - March 2020)

- Modernized a telecom client's DevOps and Cloud Infrastructure.
 - Set up staged environments to separate out the infrastructure used for development, testing, QA, and production.
 - Use HashiCorp Packer to create Windows Server images and Linux images and run those builds from automated CI. Used Puppet to handle configuration that could not be done ahead of time.
 - Assisted designing and creating their network and servers using Terraform. Configured load balancers and auto scaling instance groups to provide a highly available setup.
 - Provided Terraform training and worked closely with the in-house team to make sure that migration to the new setup went smoothly.

- Set up a system that was hosted within the client’s private network which used Terraform Cloud/Terraform Enterprise to run automated infrastructure builds.
- Related work for the client setting up RabbitMQ and MQTT.
- Created the record management software for patient tests for a medical testing company.
 - A PureScript based single page application was used for the client-side code and a Haskell/Yesod server on the backend with PostgreSQL. Software brought the company up to HIPAA other regulatory compliance requirements.
- Training and software development support for a US-based Bank/Financial institution.
 - Assisted with the process for making their applications compatible with the Red Hat OpenShift Kubernetes cluster they were deploying to their internal private network.
- Migrated a US Government Contractor/US Government Software services provider to AWS GovCloud (in order to meet regulatory requirements).
 - Used Terraform to provision the AWS resources. Set up HashiCorp Vault for secret management. Assisted setting up the logging and other tooling used by the client to manage and monitor their applications.

Valkyria - Software engineering and DevOps consulting.
DevOps Engineer

August 2020 - June 2021

- Worked to migrate a large medical record company’s application from a legacy bare metal server setup to Azure.
 - Designed the network infrastructure and cloud architecture for high availability and automatic scaling.
 - Updated their deployment method to use Packer produced VM images. Set up Github action workflows to produce and assist deploying those Azure VM images.
 - Coordinated with their engineers to update their application’s design to be able to operate across multiple servers.

**School of Electrical Engineering and Computer Science - College of Engineering
 Oregon State University**

Graduate Teaching Assistant

September 2015 - December 2017

For the following courses:

- **CS 381: Programming Language Fundamentals** - Winter 2016, Winter 2017, and Spring 2017
- **CS 581: Programming Languages I** - Fall 2016 and Fall 2017
 - Topics covered functional programming in Haskell, abstract and concrete syntax, denotational semantics, domain theory, interpreters, lambda calculus and Church encodings.

TurnKey - A real estate startup.

Web App Developer

November 2017 - April 2018

- Developed the PureScript (Halogen) based Web Application.

Server-Side Haskell Programmer

July 2015 - July 2017

- Author of the initial server-side Haskell code for the RESTful API. The API server handled communication between the client-side applications and a PostgreSQL database running on an Amazon EC2 instance.

Computer Science Department, University of Oregon

Undergraduate Grader for CIS 314, Computer Organization

September 2014 - March 2015

- Graded two terms for Professor Eric Wills.
- Course covered computer organization and instruction-set architecture - digital logic design, binary arithmetic, design of central processing unit and memory, machine-level programming.
- 20 hours per week

Global Nutrition Empowerment - Nepal project in micronutrient sustainability

Android Application Developer

Spring 2013 - Spring 2015

- A collaborative effort between USAID, the WHO and the GNE charity - for whom I volunteered.
- As an intern for the charity, I wrote an Android application that spoke to the user in Nepali and explained to them the importance of micronutrients and good nutrition. The intent was to reduce preventable birth defects with proper nutrition for the mother.
- The app also featured some interactive questions for the user. A major requirement of the application was that it could be used by an illiterate user.

Economics Department, University of Oregon

Research Assistant and Web Scraper

Winter 2013 - June 2015

- Hours on a per project basis - a project might take 20 hours.
- Scraped considerable amounts of data from the web for use in research by an economics professor at the University of Oregon using a modified version of the python based tool Scrapy.

Related activities

- **Writing** - Blog post I authored is frequently the number one ranked result when you search for “Rust DevOps” on Google.
<https://www.fpcomplete.com/blog/rust-for-devops-tooling>
- **Conferences** - Regular attendee of RustConf.