Zach Moazeni

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Profile Summary

I am a senior full stack developer who can work on all pieces of a codebase from browser to server, and from concept to optimization. I am a strong believer in using the right tool for the job, and crafting intuitive user-friendly software. I am a self-driven developer with an abundance of experience working well with teams in remote environments.

Work Experience

Jan 2019-Present
Senior Software Engineer at Abstract

I work on the Platform team which is focused on scalability and reliability of the backend services within Abstract. At Abstract I write Ruby and Go daily. Maintaining and extending an API written in Rails that serves both the web and desktop clients for Abstract customers. I also maintain and create services in Go that the Rails API depends on and in some cases supplants.

Two notable projects have been a sharding library written in Go to allow the Infrastructure team to split out disk I/O across multiple EFS volumes. And a ground-up webhooks service that allows Abstract customers to subscribe to events for delivery over HTTP. I also contribute to our dockerized setup for local development and production deployment.

In addition to software development, I regularly pair program with other developers both in my immediate group and beyond. We often work on pain-points shared across the team that are difficult to prioritize. I also help mentor folks new to Ruby or Go. Sometimes I give clarity to technical issues and approaches. Other times I share my previous experiences and mistakes. Sometimes I simply just listen to be "a duck" as they discover their problem.

I run a regular meeting for entirety of Backend Engineering to talk about current issues, share insights/wins, and to allow the group to poll ideas in order to gain confidence in decisions to move forward. Something that can often lag in remote environments.

Key technologies: Ruby/Rails, Go, Docker, PostgreSQL, Electron, Typescript, CircleCI, AWS, Datadog

Nov 2017 – Nov 2018
Senior Developer at Harvest

Notable projects include allowing new trial customers to populate their account with sample data to get an idea how to use Harvest. As part of a new Harvest GetSmart initiative, I worked on sending runaway timer emails to users much closer to when their natural work day would end. Included lots of statistical gathering and different attempts at workable models.

I trained another senior developer to take over my database responsibilities so that he could be the primary person responsible for reliability and after 6 months he was able to replace me in all but the most difficult database scenarios.

I built docker images and shared a repository for the team to develop and test all services locally. Included our main applications as well as our actively developed ancillary services . The docker images doubled as our base image for our CircleCI layer so that everything ran on a homogeneous ecosystem. Worked closely with the DevOps to help aid their ongoing move to Docker/Kubernetes and cloud hosting so that the image consistency stayed uniform throughout.

Feb 2015 – Nov 2017

Database Reliability Developer at Harvest

I was the first Database Reliability Developer for Harvest to focus on the health of our production database. I managed several large tables with well over 600 million rows.

I worked with Percona directly and relied on the percona toolkit heavily, especially tools like pt-query-digest. I wrote extensively in our internal blog to share new techniques so that the rest of the team could learn along with me.

I ensured our replication remained stable. Many large transactions would timeout our failover setup and break replication. We also had customer-initiated reporting queries that would could swamp the load on our replicated reader databases, or worse our primary writer database, affecting the our entire customer base and ecosystem.

Other database initiatives include improving our entire reporting layer by at a factor of 4x-10x. I upgraded our Percona MySQL from version v5.6 to v5.7, which came with complications regarding our connection load. That was followed by reducing our application-to-database connection overhead by over 100% as well as allow us to gracefully take reader servers out for maintenance. I migrated our database setup to row-based replication and GTID, all without customer-facing maintenance.

I worked with graphite/grafana to put together several database health dashboards that allowed me to diagnose in the moment, as well as retrospectively.

I worked with our team to make sure the impact of our database migrations would always be known ahead of time. I started an initiative where all developers recorded how long migrations ran when applying to production which still occurs in 2018. Later, I introduced gh-ost to allow us to seamlessly and carefully migrate all of our tables in a controlled manner.

I spent a great deal of time in our Rails code as it interacted with our database. From diagnosing and fixing transaction deadlocks, to bringing in Basecamp's marginalia to identify the origin of offending queries, to using github/scientist to help confidently update queries and code paths in production.

I was on call for any significant database events. Included stressful scenarios such as unhappy fail-overs due to GTID making us question data integrity, and repeated MySQL segmentation faults that were eventually isolated to a particular Linux kernel version.

Aug 2012 – Feb 2015

Senior Developer at Harvest

The most notable project I worked on was with a team for over year to rebuild our Projects section, which is a core concept within Harvest. It required a delicate balance between UX desires such as automatic reports and our uncertainty with our reporting query performance impacts. I spent a lot of time implementing Russian doll caching.

I built the integration to synchronize our invoices to Xero. It is still in use today by tens of thousands of our customers and prompted an award to Harvest from Xero. I also fielded weekly support tickets handling customer issues directly along with the rest of the company. This continued throughout my time at Harvest.

I introduced continuous integration to the company using CircleCI, which is still in use in 2018. I

integrated tmm1/test-queue to parallelize our 40 minute test down to 5 minutes on decent hardware. I also led the charge in stabilizing our entire test suite which was plagued with intermittent failing tests.

I also fixed bugs as they came up, and code reviewed peer pull requests on GitHub.

2012 - 2018
Key Technologies at Harvest

Ruby, Rails, MySQL, Statsd/Graphite/Grafana, Percona Toolkit, Redis, Memcached, Sidekiq, Chef, Ansible, Kibana, Elasticsearch, Heroku, Google Cloud, JavaScript/CoffeeScript, Backbone.js, jQuery, Node.js, Websockets, HTML5, CSS/SASS, Docker, Go, Linux, Ubuntu, Arch, Jupyter Notebook, Python, scikit-learn, keras, CircleCI, rspec, capybara

Feb 2011 – Aug 2012
Senior Developer at CollectiveIdea

I contracted on a variety of projects and clients. The most notable was for a very popular Fortune 50 company working with a team on a backend API developer for an application which all in-store employees used for day-to-day responsibilities. I negotiated and designed multiple independent microservices that were used as a cohesive whole.

I also spent a great deal of time understanding the company's localization and translation workflow and implementing key features in certain services to accommodate and aid the management of that process.

Key technologies: Ruby, Rails, MongoDB, PostgreSQL, Heroku, API Development.

May 2010 – Feb 2011
Independent Contractor

I worked as an independent contractor working on a variety of small and medium sized projects while managing clients relationships. Notable projects included writing an iPad dashboard from scratch and a working as a developer on a team for an affiliate tracking application with heavy data processing.

Key technologies: Ruby, Rails, PostgreSQL, iOS, Wordpress, PHP, HTML, CSS, JavaScript

Jan 2010 – Apr 2010
Adjunct Professor at Grand Rapids Community College

Taught CS217: Advanced Java. I have always been interested in teaching and had even considered pursuing my Computer Science degree further. This was a fantastic experience as I wasn't given a curriculum. So it was my responsibility to put together the lessons and labs for my students.

Jan 2007 – May 2010
Developer at Elevator Up

I wore many hats at Elevator Up as the first employee. I was primarily a software developer working on different client work for startup and established companies alike. I also was responsible for Elevator Up's application hosting services as a reliability engineer. Finally, we launched several startup software servers and I was the key developer for each of them.

Key technologies: Ruby, Rails, ExpressionEngine, Drupal, PHP, Java.

May 2004 – Jan 2007

Java Developer Early Career

I worked for a few different companies while writing Java J2EE full time throughout my time at college to pay for tuition and living expenses.

Notable projects include working on an internal ERP for a large scale aeronautics company. Building a custom white-labeled internal management system that was resold to building contracting companies. Oracle reporting query performance tuning for a national health insurance company. Internal tooling at a national food distribution company.

Key technologies: Java, J2EE, Spring, Hibernate, Oracle, PL/SQL, Perl, Python.

Open Source, Hobbies, and Education

I have developed a few open source libraries in my free time. Notably harvested, a ruby wrapper around the Harvest API, and csscss, a CSS parser and analyzer. I am also active with projects such as gh-ost, orchestrator, and rails core.

My hobbies include movies, running tabletop role playing games, podcasts, Linux, and learning new programming languages.

I graduated with Bachelors of Science in Computer Science from Grand Valley State University in 2006.