

Michael Barrientos

Platform engineer with 20 years proven expertise in scaling backend technical designs and engineering teams from early startups to mid-sized organizations.

The Public Health Company, Palo Alto, CA — Founding Principal Software Engineer July 2021 - July 2022

Determined platform technology of a startup focused on a data platform for machine learning based infectious disease predictions.

- Established infrastructure-as-code tooling, APIs, and languages using Terraform, Helm, and ArgoCD on Kubernetes on Google Cloud (GCP).
- Created archetype for Python services for use throughout the company, with standard libraries, testing, artifacts, logging, monitoring, and CI/CD.

Chan Zuckerberg Initiative, Redwood City, CA — Staff Software Engineer June 2018 - July 2021

Designed platform engineering tools deploying EC2/ECS/EKS/Lambda based infrastructure in the organization's charitable science & education initiatives.

- Architectural consultation to 8+ teams of wide levels of maturity, scaling apps to larger audiences, development teams, and complex data pipelines.
- Taught classes, implemented, and promoted infrastructure-as-code and GitOps solutions managing secure applications via Terraform.
- Implemented Airflow on Kubernetes for data science & engineering teams.
- Evangelized and implemented SLI/SLO definitions and alerting in Datadog.

Syapse, San Francisco, CA — Staff Software Engineer and Software Architect February 2013 - May 2018

Built HIPAA infrastructure for precision medicine in cancer genomics and next generation sequencing (NGS), scaling company from <10 employees to 125+.

- Initiated efforts to convert monolithic application into decoupled services in Docker with independent databases via Kinesis stream processing.
- Guided multiple re-architectures of data store from in-house database, to Blazegraph/Amazon Neptune semantic graph store, to Postgres.
- Initiated and implemented DevOps systems to automate, monitor, and scale services on AWS EC2/S3/Glacier with SaltStack and Terraform.
- Headed characterization of system performance and re-evaluation of alerting/logging systems.

Obama for America, Chicago, IL — Engineer June 2012 - November 2012

Engineered integrations for Project Narwhal supporting analytics, internal tools, website, and mobile apps for a successful national political campaign.

- Real-time ingestion of millions of voters, donors, and events from 3rd party systems using Flask and SQLAlchemy backed by Amazon SQS.

Google, Mountain View, CA — Software Engineer Feb 2007 - April 2009

Developed cluster management and systems infrastructure tools.

- Analyzed resource utilization within Google's machine clusters, and implemented a system to manage job scheduling risk based on user requests.

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INFRASTRUCTURE TOOLS

Kubernetes, Terraform, AWS (EC2, EKS, S3, SQS, IAM, KMS, RDS, VPC, Kinesis), GCP, Ansible, SaltStack, ArgoCD, Auth0, Docker, Helm, statsd, Datadog, RabbitMQ, Sentry, Jenkins, GitHub Actions

LIBRARIES AND FRAMEWORKS

SQL (Postgres), SQLAlchemy, Python (Django, Flask), gRPC, REST, Redis, Airflow, Apache Avro, uwsgi, Nginx, CORBA

LANGUAGES

Python, C++, Golang, Java, C, Scala, Rust, bash, JavaScript, Groovy, Perl, Lua

EDUCATION

Stanford University — M.S. Computer Science (GPA 3.87)

December 2011

University of California, Berkeley — B.S. Electrical Engineering and Computer Sciences

December 2002

SECURITY CLEARANCE

Top Secret with SSBI and polygraph

March 2010 last current

HOBBIES

Swing Dance, Bouldering, A Cappella Singing, Running