

Michael Barrientos

Software architect 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.

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

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.
- Implemented Airflow on Kubernetes for data science & engineering teams.

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.
- Designed query language SyQL to translate ontology queries to semantic SPARQL query, which powered Syapse's entire internal and external APIs.
- Guided multiple rearchitectures of data store from in-house database, to Blazegraph/Amazon Neptune semantic graph store, to Postgres.

Jetlore, Sunnyvale, CA — Senior Software Engineer Sep 2011 - June 2012

Founding team for startup applying ML classifiers on social network posts.

- Designed and implemented APIs and sharding infrastructure for backend NoSQL databases using Scala Lift, Akka, MongoDB, and Elasticsearch.
- Developed authorization for REST API using OAuth 2.0 draft standards.

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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LANGUAGES

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

LIBRARIES AND FRAMEWORKS

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

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

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