Koorous Vargha

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Experience

Software Engineer 2 July 2022 – Present
The Genomics Institute *Santa Cruz, CA*

- Designed a dashboard in **React.js** and **TypeScript** with 3 million+ data points. Developed an **Express.js** API that integrated a **Google Cloud Datastore** NoSQL database and a **Snowflake** SQL data warehouse.
- Engineered a highly available infrastructure that orchestrated **Docker** containers in **Google Kubernetes Engine**, achieving 99.9% uptime.
- Implemented a REST API using **Flask** and **Docker** that created and stored visualizations in **Google Cloud Storage**. Cached requests using **Redis**, achieving an average response time of 37ms.
- Accelerated deployments by 50% by building CI/CD pipelines using **GitHub Actions** and **Google Cloud Build**.
- Created a scalable data pipeline using event-driven architecture. Leveraged **Google Cloud Pub/Sub**, **Storage**, and **Functions** to source and process over 14.5 million files with **Python**.

Software Engineer 1 Aug. 2021 – June 2022
The Genomics Institute *Santa Cruz, CA*

- Designed a face-scanning web app, leveraging **WebRTC** and **MediaPipe** machine learning models. Built a **Django** backend to process and store video data in **AWS S3** and in a **PostgreSQL** relational database.
- Developed a responsive user management frontend using **React.js** and **TypeScript**, and a **Django** backend that connected to a **PostgreSQL** database.
- Built an internal URL shortener with an auto-expiration feature using **Node.js**, **AWS Lambda**, and **S3**.
- Created a data analytics dashboard leveraging **AWS CloudWatch Dashboards**, and published daily metrics using **Python**, **AWS Lambda**, **EventBridge**, and **PostgreSQL**, capturing 100+ metrics.
- Streamlined deployments by automating AMI and launch template creation in **AWS EC2** using **Terraform**.

Software Engineer Intern May 2020 – Aug. 2021
LEEPS Lab *Santa Cruz, CA*

- Created a REST API that processed stock transactions for experiments using **Django** and **PostgreSQL**. Implemented **Redis** as the in-memory data store, achieving a throughput of 1000 requests per second.
- Designed a stock trading interface with interactive graphs using **HTML**, **CSS**, **JavaScript**, and **Highcharts**, enabling users to place stock orders and receive updates in real-time using **WebSockets**.
- Decreased runtime by 93% of a stock market simulator by implementing parallelism using **Python** multiprocessing.
- Deployed 3 Linux servers to **DigitalOcean**, and secured **NGINX** web servers with SSL certificates.
- Graphed simulated stock market data to analyze different parameters using **Python**, **Numpy**, and **Matplotlib**.

Project

DoomerMeter June 2023

- Performed real-time sentiment analysis on Reddit, consuming 8.4 million comments per day.
- Sourced Reddit comments with **Python** and **AWS EC2**. Applied sentiment analysis via **Confluent Apache Kafka**, **Node.js**, and **AWS Lambda**, and stored daily results in **AWS DynamoDB**.

Education

University of California, Santa Cruz Graduated March 2021
Bachelor of Science in Computer Science *Santa Cruz, CA*

Certification

AWS Certified Solutions Architect - Associate June 2023

Technical Skills

Languages: Python, JavaScript, TypeScript, HTML, CSS, SQL
Databases: PostgreSQL, Snowflake, Redis, AWS DynamoDB, Google Cloud Datastore
Frameworks/Libraries: Kubernetes, Docker, Terraform, CircleCI, Apache Kafka, React.js, WebRTC, Node.js, Express.js, Django, Flask, Selenium, Cypress
Cloud Services: Google Cloud Platform (GCP), Amazon Web Services (AWS), Confluent