Koorous Vargha

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Certificates and Awards

AWS Certified Solutions Architect - Associate June 2023

Best Use of Google Cloud at CruzHacks 2020 Jan. 2020

Technical Skills

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

Experience

Full Stack Software Engineer 2 July 2022 – Present

The Genomics Institute *Santa Cruz, CA*

- Developed a COVID-19 outbreak analysis tool that reduced contact tracing times by 60% using **React.js**, **TypeScript**, **Express.js**, **Google Cloud Datastore**, and **Snowflake**.
- Migrated infrastructure to **Google Kubernetes Engine** which increased uptime from 90% to 99.9% and decreased latency by 73% by fine-tuning auto-scaling metrics and replica counts.
- Implemented a REST API with a hierarchical clustering algorithm that detected COVID-19 outbreaks, resulting in a 30% increase in early detection rates, using **Flask**, **Redis**, **Docker**, and **Google Cloud Storage**.
- Constructed CI/CD pipelines, cutting deployment times by 50%, using **GitHub Actions** and **Google Cloud Build**.
- Created a COVID-19 data pipeline that processed over 14.5 million sequences using **Python**, **Google Cloud Pub/Sub**, **Cloud Functions**, and **Cloud Storage**.

Full Stack Software Engineer 1 Aug. 2021 – June 2022

The Genomics Institute *Santa Cruz, CA*

- Reduced loading times by 25% by utilizing code-splitting in **React.js** and offloading assets to **Google Cloud CDN**.
- Converted a monolithic REST API to a microservice-based architecture, resulting in a 30% decrease in infrastructure costs, using **Python**, **Google Cloud Functions**, **API Gateway**, and **Cloud Tasks**.
- Increased throughput by 40% through deploying **Docker** containers on **Google Compute Engine** and **Cloud Run**.
- Automated data collection, saving 24 hours a week, by creating a web scraper using **Python** and **Selenium**.
- Designed end-to-end and integration tests with 90% code coverage using **Cypress** and **Python**.

Software Engineer Intern May 2020 – Aug. 2021

LEEPS Lab *Santa Cruz, CA*

- Developed a REST API that supported up to 1000 stock transactions per second and real-time updates, using **Django**, **WebSockets**, **PostgreSQL**, and **Redis**.
- Designed an interactive interface allowing users to place bids/asks on stocks, resulting in a 35% increase in user engagement, using **HTML**, **CSS**, **JavaScript**, and **Highcharts**.
- Optimized a stock market simulator, which decreased execution time by 93%, by using multiprocessing in **Python**.
- Migrated experiments to the cloud, increasing concurrent studies by 300%, using **DigitalOcean** Linux servers.
- Graphed stock market data with **Python** and **Matplotlib**, which decreased analysis time by 60%.

Projects

DoomerMeter | *AWS, Apache Kafka, React.js, TypeScript, Node.js, Python, Terraform, CircleCI* June 2023

- Performed real-time sentiment analysis on Reddit, consuming 8.4 million comments per day, using **Confluent Apache Kafka**, **Node.js**, **Python**, **AWS Lambda**, **EC2**, and **DynamoDB**.
- Designed a user-friendly frontend in **React.js** and **TypeScript**, and served it via **AWS S3** and **Cloudfront**.
- Developed a REST API in Node.js that queried AWS DynamoDB and deployed it on **AWS Lambda** and **API Gateway**.
- Provisioned infrastructure using **Terraform**, and automated deployment by creating a CD pipeline in **CircleCI**.

Education

University of California, Santa Cruz Graduated March 2021

Bachelor of Science in Computer Science *3.50 GPA*