# Koorous Vargha

**Full Stack Software Engineer**

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## Technical Skills

**Languages**: Python, JavaScript, TypeScript, HTML, CSS, SQL, Java, Go
**Databases**: PostgreSQL, Snowflake, Redis, Google Cloud Datastore, Firebase
**Frameworks/Libraries**: Kubernetes, Docker, React.js, Material-UI, Express.js, Node.js, Django, Flask, Jest, Cypress
**Cloud Services**: Google Cloud Platform (GCP), Amazon Web Services (AWS), DigitalOcean

## Experience

**Software Developer** Aug. 2021 – Present
*The Genomics Institute* *Santa Cruz, CA*

- Developed a React web app that reduced data aggregation times by 99%, by creating an Express.js REST API and writing database queries against Google Cloud Datastore and Snowflake.
- Designed Kubernetes clusters with load balancing that improved latency by 73% using Google Kubernetes Engine.
- Implemented a REST API that graphs COVID-19 tests onto a tree data structure, enabling scientists to efficiently analyze outbreaks, utilizing Flask and Docker. Reduced duplicate request times by 99% using Redis caching.
- Automated the building, testing, and deploying of applications, cutting deployment times by 50%, by creating CI/CD pipelines using GitHub Actions and Google Cloud Build.
- Wrote end-to-end and integration tests with 90% code coverage using Cypress and the Python unit test framework.

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

- Developed an interactive high-frequency trading platform utilizing D3.js for an enhanced user experience.
- Enabled real-time updates by implementing a Django API based on web-sockets, utilizing object-oriented design to store user information in a PostgreSQL database.
- Achieved high throughput and low-latency by using Redis to store and process active stock transactions.
- Optimized a stock market simulator, resulting in a 93% decrease in execution time, by using multiprocessing.
- Visualized stock market data that decreased analysis time by creating graphs in Python and Matplotlib.

## Education

**University of California, Santa Cruz** Graduated March 2021
*Bachelor of Science in Computer Science* *3.50 GPA*
**Coursework**: Distributed Systems, Web Applications, Databases, Computer Networking, Machine Learning

## Projects

**Gmail Clone** | *React.js, Express.js, Docker, PostgreSQL* Dec. 2020

- Built a fully functional email app using React, with features including drafting, sending, receiving, starring, and deleting emails; resulted in a user-friendly interface for efficient email management.
- Implemented a RESTful API with Express.js for data storage and retrieval by querying a PostgreSQL database.
- Strengthened user privacy and security by implementing user login functionality and integrating JSON Web Tokens (JWT), resulting in a secure and seamless login experience for users.

**Distributed Database** | *Go, Docker* May 2020 – June 2020

- Created a fault-tolerant distributed database using Docker containers, by implementing data replication and automated data resharding, which resulted in a highly scalable and reliable system for storing key-value pairs.
- Developed an API using Go, enabling clients to easily perform database operations and modify the node count.
- Optimized database performance and capacity by implementing data sharding, resulting in faster processing and efficient use of resources.

**AmberDash** | *GCP, Flask, JavaScript, HTML, CSS, Firebase* Jan. 2020

- Awarded “Best Use of Google Cloud” out of 300+ projects by Google at CruzHacks 2020.
- Designed a dynamic dashboard using the Google Maps API, which plotted recent amber alert sightings detected by a Google Vision-enabled Android app.
- Created a Flask API to retrieve and process data from a Firebase database, resulting in a user-friendly interface for real-time monitoring and analysis of amber alert sightings.