

# KOOROUS VARGHA

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## TECHNICAL SKILLS

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**Languages:** Python, JavaScript, TypeScript, Java, Go, HTML, CSS, SQL

**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

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### Software Developer

Aug. 2021 – 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 that achieved a 99.9% uptime and decreased latency by 73%.
- Implemented a REST API that detected COVID-19 outbreaks 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.
- Designed automated end-to-end and integration tests with 90% code coverage using Cypress and Python.

### Programmer Intern

May 2020 – Aug. 2021

*LEEPS Lab*

*Santa Cruz, CA*

- Developed a real-time high-frequency trading platform, supporting up to 1000 stock transactions per second, using HTML, CSS, JavaScript, D3.js, Django, WebSockets, PostgreSQL, and Redis.
- Optimized a stock market simulator, resulting in a 93% decrease in execution time, by using multiprocessing.
- Migrated experiments to the cloud, increasing concurrent studies by 300%, using DigitalOcean Linux servers.
- Trained and mentored 6 interns by performing code reviews and writing documentation using RST.
- Visualized stock market data that decreased analysis time by creating graphs with Python and Matplotlib.

## EDUCATION

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### 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

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### Gmail Clone | React.js, Material-UI, Express.js, Docker, PostgreSQL

Dec. 2020

- Built a responsive email app using React.js, with features including email composition, starring, and deletion.
- Implemented a RESTful API with Express.js for storing and retrieving emails by querying a PostgreSQL database.
- Added login functionality and secured user information by integrating JSON Web Token (JWT) validation.

### Distributed Database | Go, Docker

May 2020 – June 2020

- Created a fault-tolerant 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 query the database and adjust the number of nodes.
- Optimized database performance and capacity by distributing data across multiple nodes using hash ranges.

### 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.