# Koorous Vargha

**Full Stack Software Engineer**

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## Experience

**Software Developer** Aug. 2021 – Present

*The Genomics Institute* *Santa Cruz, CA*

***GCP, Kubernetes, Docker, React.js, Express.js, Node.js, Flask, Python, TypeScript, JavaScript, HTML, CSS, SQL, NoSQL***

- 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% and resulted in a 50% decrease in infrastructure costs; achieved a 99.5% uptime by leveraging health checks.
- 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.
- Minimized bugs by writing end-to-end and integration tests with a minimum of 90% code coverage using Cypress and the Python unit test framework.

**Lead Programmer Intern** Oct. 2020 – Aug. 2021

*LEEPS Lab* *Santa Cruz, CA*

***Django, Python, JavaScript, HTML, CSS, PostgreSQL, Redis, DigitalOcean***

- Developed a web-based high-frequency trading platform, supporting up to 1000 transactions per second, by creating a REST API in Django to interface with a PostgreSQL database and Redis as an in-memory data store.
- Optimized a stock market simulator, resulting in a 93% decrease in execution time, by utilizing multiprocessing.
- Maintained high team velocity by mentoring 5 interns through code reviews, and reduced onboarding time by creating comprehensive documentation.

**Programmer Intern** May 2020 – Oct. 2020

*LEEPS Lab* *Santa Cruz, CA*

***Django, Python, JavaScript, HTML, CSS, PostgreSQL, DigitalOcean***

- Migrated experiments to the cloud, which increased concurrent studies by 300%, using DigitalOcean Linux servers.
- Improved server efficiency by consolidating processes into bash scripts and automating them using CRON.
- Visualized stock market data that decreased analysis time by creating graphs using 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, Material-UI, JavaScript, HTML, CSS, Express.js, Node.js, Docker, PostgreSQL* Dec. 2020

- Built a responsive email app using React.js and Material-UI, containerized using Docker.
- Created a REST API using Express.js to communicate with a PostgreSQL database.
- Added user login, which improved user privacy and security, by integrating JSON Web Tokens (JWT).

**AmberDash** | *Python, Flask, JavaScript, HTML, CSS, Firebase (NoSQL)* Jan. 2020

- Awarded “Best Use of Google Cloud” out of 300+ projects by Google at CruzHacks 2020.
- Built a dynamic dashboard that plotted recent amber alert sightings onto Google Maps, detected by a Google Vision-enabled Android app, by creating a Flask API that made database queries to Firebase.

## Technical Skills

**Languages**: Python, JavaScript, TypeScript, HTML, CSS, SQL (PostgreSQL), NoSQL, Java, Go
**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