

KOOROUS VARGHA

Full Stack Software Engineer

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EXPERIENCE

Software Developer

Aug. 2021 – Present

UC Santa Cruz Genomics Institute

Santa Cruz, CA

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

- Developed a HIPAA-compliant full-stack application that matches positive COVID-19 tests to medical records, decreasing COVID-19 outbreak investigation time from 8 hours to less than 1 hour. It used React.js, Material-UI, Express.js, Google Cloud Datastore, Snowflake SQL, and Google App Engine.
- Designed Kubernetes clusters that decreased response times under load by 73% to 38ms by tuning auto-scaling metrics, which led to a 50% reduction in hosting costs. Achieved a 99.5% uptime by setting up health checks.
- Built CI/CD pipelines that cut deployment times by 50% to 10 minutes with GitHub Actions and Google Cloud Build.
- Created a REST API microservice that visualizes positive COVID-19 tests onto a tree-like structure, enabling scientists to quickly determine if an outbreak occurred, by using Flask, Unicorn, and Docker.
- Successfully integrated Single Sign-On, simplifying access management, with AzureAD using MSAL React.
- Wrote unit tests with a 100% code coverage rate using Cypress and the Python unit test framework.

Lead Programmer Intern

Oct. 2020 – Aug. 2021

UC Santa Cruz LEEPS Lab

Santa Cruz, CA

Django, Python, JavaScript, HTML, CSS, Polymer.js, PostgreSQL, Redis, DigitalOcean

- Developed a full-stack multiplayer high-frequency trading platform, supporting up to 1000 transactions/s with a 1ms response time, using Django, Polymer.js, PostgreSQL, and Redis.
- Optimized a legacy stock market simulation application by utilizing parallelism techniques, resulting in a 15x performance improvement from 2.5 hours to 10 minutes.
- Facilitated timely project completion by conducting weekly standups and mentoring a team of 5 interns.
- Decreased meetings by over 80% by creating comprehensive documentation using reStructuredText (rST).

Programmer Intern

May 2020 – Oct. 2020

UC Santa Cruz LEEPS Lab

Santa Cruz, CA

Django, Python, JavaScript, HTML, CSS, Polymer.js, PostgreSQL, DigitalOcean

- Migrated experiments to the cloud, which increased concurrent studies by 3x, using DigitalOcean Linux servers.
- Improved server efficiency by consolidating processes into bash scripts and automating them using CRON.
- Visualized stock market simulation data, decreasing analysis time, using Python, Matplotlib, Pandas, and Numpy.

EDUCATION

University of California, Santa Cruz

Sept. 2017 – 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 full-stack email application using React.js and Material-UI, packaged in a Docker container.
- Created a REST API defined by OpenAPI, and utilized Express.js to communicate with a PostgreSQL database.
- Implemented automated unit tests with 100% code coverage using Jest.
- Integrated JSON Web Tokens (JWT) for user authentication, improving user privacy and security.

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 showcased recent amber alert sightings, detected by a Google Vision-enabled Android app, plotted onto Google Maps using HTML, CSS, JavaScript, Flask, and Firebase.

TECHNICAL SKILLS

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

Frameworks: Kubernetes, Docker, Node.js, React.js, Material-UI, Express.js, Django, Flask, Jest, Cypress, Polymer.js

Cloud Services: Google Cloud Platform (GCP), Amazon Web Services (AWS), DigitalOcean