Gokul Prathin Asamani

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Summary

Full Stack Software Engineer with over 4 years of hands-on experience designing and developing scalable cloud-based applications. Proven expertise in full-stack development using modern frameworks and robust system architecture, with practical AWS and GCP experience. Adept at building reliable, high-performance solutions through agile methodologies, consistently enhancing performance and user engagement.

Skills

- **Development**: Full-stack development, Python, React, Tailwind CSS, NextJS
- **Cloud And Infrastructure**: AWS
- **Software Development Practices**: Coding standards, Build processes, Testing, Source control, Code reviews, Production operations
- **System Design**: System design

Professional Experience

Agrograph **Sep 2024 - Apr 2025**
Full Stack Software Engineer *Fairfax, USA*

- Architected and implemented scalable cloud infrastructure on Google Cloud Platform (GCP) using container orchestration with Google Kubernetes Engine (GKE) to support Agrograph's geospatial data processing platform, demonstrating strong system design practices.
- Established and managed CI/CD pipelines using GitHub Actions, automating build processes, testing, and deployment to ensure platform reliability and adherence to coding standards.
- Collaborated across the full software development lifecycle, developing customer-facing features with React/NextJS on the front end and Python on the back end, ensuring system reliability and proper application scaling.
- Implemented and optimized a Tegola vector tile server integrated with PostGIS to deliver performant map visualizations for parcel, tillage, and cover crop data, applying effective design patterns.

George Mason University **Feb 2023 - Aug 2024**
Research Assistant *Fairfax, USA*

- Contributed to the Geoweaver Project, an open-source workflow management tool funded by NASA, enhancing its functionality and improving user engagement through collaborative development efforts.
- Maintained the existing codebase and implemented new features in line with best practices in the software development lifecycle and system design principles.
- Assisted a professor in writing research papers on topics including 'Pygeoweaver Tangible Workflows' and 'A Review of Practical AI for Remote Sensing in Earth Sciences', reinforcing technical documentation skills.
- Created an open-source Python bindings library for Geoweaver (https://github.com/ESIPFed/pygeoweaver) to facilitate advanced analyses and improve accessibility for the research community.
- Developed a Snow Water Equivalent workflow utilizing SRTM DEM and Gridmet data to predict water in snow across the Western US, applying robust software engineering and system reliability techniques.

Marvin (fka Userfocus) **Jun 2021 - Aug 2022**
Software Engineer *Telangana, India*

- Developed full-stack applications using Django, Flask, AWS, Elastic Search, Postgres, Heroku, React, Redux, and Webpack, enhancing system performance and user experience
- Closely worked with product team to create dashboards on Retool for analysis and gathering insights on how user's interact with the platform for laying down future roadmap for the company.
- Worked on Zoom integration into the existing codebase and completely built a end to end pipeline to record and analyse calls that occur outside zoom such as MS Teams & Google Meet and automated the recording process with Selenium, FFmpeg & Chrome headless

Offerly **Dec 2019 - May 2021**
Associate Software Engineer *Hyderabad, India*

- Worked on building a full stack E-Commerce application. Built a functional administration panel for active monitoring of customers and order details.
- Implemented business requirement features in production using React, Redux, Postgres, AWS, Node.js, and Sentry, improving application functionality and reliability
- Responsible for migrating the project from React to Next's for better performance and server side rendering

Education

George Mason University **Aug 2022 - May 2024**
Master's degree, Computer and Information Sciences, General

GITAM Deemed University **Jan 2017 - Jun 2021**
Bachelor of Technology, Computer Science

Projects

Geoweaver **Feb 2023 - Apr 2025**

- Geoweaver is an in-browser software allowing users to easily compose and execute full-stack data processing workflows via taking advantage of online spatial data facilities, high-performance computation platforms, and open-source deep learning libraries.
- It provides all-in-one capacity covering server management, code repository, workflow orchestration software, and history recorder.

Pygeoweaver **Feb 2023 - Apr 2025**

- This package is a Python wrapper of the GeoWeaver app which was written in Java.
- This package is designed for Jupyter users to be able to directly use Geoweaver in Python, Jupyter notebook or JupyterLab (JupyterHub).

Snowcast **May 2023 - Mar 2024**

- SWE workflow leverages Geoweaver, a powerful tool that helps scientists create, manage, and share seamless and efficient computational frameworks effortlessly.
- By using Python and Shell scripts to collect the GridMET meteorology data, we trained an AI-based model with a daily temporal scale and 4-Km spatial resolution across the western United States.
- The core of the AI-based workflow centers on preparing historical training and near-real-time prediction inputs from various data sources dynamically for machine learning algorithms, such as random forest and deep learning methods.
- The integration of these techniques enables the model to capture complex spatiotemporal patterns in SWE dynamics, incorporating non-linear relationships and interactions between various meteorological variables.

Natours

- A tour booking application using the MERN stack (MongoDB, Express.js, React/Redux, Node.js).
- With user authentication with JWT, role-based access control, and secure password management.
- Google Maps API for geolocation services, allowing users to view and book tours based on location.
- Developed dynamic, interactive front-end components with React and Redux for state management.
- Deployed the application on Heroku.

Certificates

- **Oracle Cloud Infrastructure 2024 Generative AI Certified Professional**: Oracle Cloud Infrastructure 2024 Generative AI Certified Professional
- **Microsoft Power BI Desktop for Business Intelligence**: Microsoft Power BI Desktop for Business Intelligence — Maven Analytics
- **Python Data Structures**: Python Data Structures — Coursera
- **Python Geospatial Navigation System**: Python Geospatial Navigation System — ISRO
- **Geographic Information Services Professional (GIS)**: Geographic Information Services Professional (GIS) — ISRO
- **PyTorch for Deep Learning**: PyTorch for Deep Learning — Pierian Training

Publications

- Actionable Science for Greenhouse Gas Emission Reduction, Springer. *Developed practical strategies for reducing greenhouse gas emissions by translating scientific knowledge into actionable solutions. Emphasized interdisciplinary approaches and stakeholder involvement to enhance the effectiveness of emission control measures, fostering collaboration among scientists, policymakers, and individuals.*
- Actionable Science for Snow Monitoring and Response, Springer. *Integrated advanced technologies, collaborative partnerships, and community engagement in snow monitoring to improve snow management practices. Leveraged remote sensing, ground-based measurements, and citizen science initiatives for accurate data analysis and risk prediction, enhancing the resilience and sustainability of snow-dependent communities.*
- MDPI. A Review of Practical AI for Remote Sensing in Earth Sciences. *Synthesized and analyzed AI methodologies and outcomes in remote sensing, identifying research gaps and emerging trends. Explored diverse applications including image classification, land cover mapping, and data fusion, while addressing challenges like data quality and model interpretability. Provided comprehensive insights for researchers and decision makers to advance AI integration in Earth sciences.*