Vamsi Krishna Maram

vamsimj07@gmail.com | +1 571-584-7363 | Linkedin | Github | Fairfax, VA

SUMMARY

Detail-oriented Computer Science graduate with 2+ years of experience in software engineering, full-stack web development, and optimization. Skilled in Python, JavaScript, and Java with expertise in AWS, GCP, databases, and DevOps practices. Proven track record in building scalable applications, automating workflows, and delivering data-driven solutions with CI/CD and Agile. Passionate about applying technical skills to deliver efficient, user-friendly software solutions. Authorized to work in the U.S.

PROFESSIONAL EXPERIENCE

Software Engineer | Sodexo | Fairfax, VA   **Jan 2025 — Present**
- Built a Python-based UAV sensor placement app with Streamlit, used by researchers to simulate and visualize 500+ optimized layouts.
- Implemented geospatial features (distance checks, protected areas, restricted zones), cutting invalid placements by 35%.
- Developed workflows to run detection probability models and generate 200+ scenario outputs as JSON/ZIP files for analysis.
- Integrated Pyomo and DGAL libraries to run prediction and optimization models, improving placement accuracy and coverage by 20%.
- Delivered automated reporting and scenario comparison dashboards, speeding decision-making on deployment strategies by 40%.
- Optimized grid computations and Python logic, reducing simulation runtime by 30% across 300+ real-world datasets.

Freelance Software Developer | irresistible-cupcakes.com   **Aug 2024 – Dec 2024**
- Architected a React.js frontend with dynamic components and a Node.js/Express backend, handling product display, contact forms, and orders for 300+ daily interactions.
- Deployed the website on AWS EC2, leveraging S3 for static assets and ensuring a scalable, responsive architecture for high traffic.
- Secured the platform with SSL/TLS encryption, configured domain and DNS management, and implemented Git-based version control for maintainable code.

Software Engineer | Deloitte | Hyderabad, India   **May 2023 — June 2024**
- Built backend services for a finance platform processing 10K+ daily transactions, reducing budget approval time by 25%.
- Improved Spring Boot + PostgreSQL APIs with indexing and query tuning, cutting average response times by 30%.
- Automated invoice PDF generation with reusable templates and access control, lowering monthly finance workload by 20%.
- Co-developed dashboards with caching, pagination, and visualization features, reducing backend server load by 29%.
- Delivered features in Agile sprints with CI/CD pipelines and consistent unit test coverage across multiple modules.
- Implemented role-based access control and JWT authentication across finance services, strengthening data security.
- Designed and executed database schema migrations for PostgreSQL and MongoDB, ensuring smooth transitions with zero downtime.

Research Assistant | University College of Engineering | Kakinada, India   **Jul 2022 — Apr 2023**
- Built a deep RL model in TensorFlow/Keras for 4-way traffic signals, reducing wait time by 14% and stopped vehicles by 20%.
- Implemented Deep Q-Learning with reward functions to improve adaptive traffic control over fixed-timing systems.
- Designed detailed SUMO simulations with TraCI API and NETEDIT, modeling realistic urban traffic using Weibull distribution.
- Tuned critical hyperparameters and optimized training workflows, accelerating convergence and improving model stability.
- Visualized key performance improvements in delay, queue length, and rewards using Matplotlib and Pandas dashboards.

PROJECTS

API Rate Limiter | Node.js, Redis, React   **GitHub**
- Built distributed rate limiter with data structures for sliding window and leaky bucket algorithms, scaling to 15K+ requests/second.
- Developed a monitoring dashboard in React with live charts for anomaly detection, teamwork reporting, and status validation.

Rune: Agentic Recruiter Assistant | Flask, React, Python, TypeScript, WebSockets, PostgreSQL, OpenAI, Docker   **GitHub**
- Improved recruiter drafting efficiency by 25%–35% with an AI agent using the OpenAI API for job descriptions and outreach templates.
- Built a real-time, multi-session chat platform by containerizing frontend and backend microservices with Docker.

EDUCATION

Master's in Computer Science | George Mason University (CGPA: 3.63)   **Fairfax, VA**
Bachelor of Technology in Computer Science | University College of Engineering, Kakinada (CGPA: 3.82)   **Andhra Pradesh, IN**

TECHNICAL SKILLS

Programming: Python, JavaScript, TypeScript, Java, SQL, Dart, HTML, CSS
Databases & Storage: PostgreSQL, MySQL, MongoDB, Redis, DynamoDB, S3, VectorDB, Oracle, Salesforce
Frameworks & Libraries: Django, Flask, FastAPI, Node.js, Express, Spring Boot, Streamlit, LLM, REST API, GraphQL
Cloud Technologies: Amazon Web Services (AWS), Google Cloud Platform (GCP)
DevOps & Tooling: Docker, Kubernetes, Jenkins, GitHub Actions, Terraform, Linux, Git, Postman
Development Practices: Test-Driven Development , CI/CD, Agile, Software Development Life Cycle , Code Reviews, Unit Testing
Security & Performance: JWT Authentication, Caching, Pagination, Performance Tuning, Database Schema Migrations, Rate Limiting