

Durga Shankar

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EDUCATION

M.S in Computer Science - George Mason University

Sept 2024 – May 2026

Statistical Machine Learning, Advanced Mathematics for CS, Deep Learning, Computer Vision, Real-Time System Design, Software Testing and Quality.

Fairfax, VA

B.Tech in Computer Science and Engineering - KL University

Jul 2020 – Apr 2024

Embedded Machine Learning, Neural Networks, Statistics, Database, Robotics, Data Science, OS, Computer Architecture, IOT Architecture

Vijayawada, AP

PROFESSIONAL EXPERIENCE

Graduate Teaching Asst - Cloud & AI Infra IT 442

Jan 2025 - Present

George Mason University (AWS, Azure, GCP)

Fairfax, VA

- **Mentored 200+ students** on **AWS, Azure, GCP** like AWS BigQuery, EC2, AWS CDK, Lambda, Azure OpenAI, Docker, and GC Functions, Vertex AI delivering hands-on lab experiments.
- **Published 31 technical resources** for system design, distributed system patterns, and Kubernetes orchestration tutorials with weekly office hours, increasing student engagement.

Software Development Engineer

Aug 2023 - Aug 2024

Paytm (Contract) (Python, SQL, React, Django, AWS, Docker)

Noida, India

- **Boosted mobile conversions by 24%** by contributing to **P90 load times reduction** from **1.9s to 800ms** by engineering a centralized **Django Redis caching layer** and implementing React Native code splitting.
- Resolved dashboard timeouts and reduced query execution times to **500 ms** by analyzing and optimizing execution plans of complex SQL queries for **AWS Redshift** data pipelines.
- Reduced frontend regression bugs in Q2 2024 and accelerated feature delivery velocity by **20%** by architecting **reusable component libraries** for **35+ modules**, enforcing strict **80% Jest** test coverage.
- **Achieved 98% build success** and cut release cycles by **33%** by designing shared **CI/CD pipelines** for **160+ microservices** using Jenkins, GitHub Actions, and SonarQube quality gates.

Software Engineering Intern

Jan 2023 - June 2023

AICTE (Python, Scikit-learn, Classification ML, React, Node.js)

Mumbai, India

- **Developed an automated ticket classification system** using Scikit-learn to process **100K+ records**, achieving **95% accuracy** and reducing manual task effort by **70%**.
- **Optimized API response times by 65%** for a SARIMA-based **forecasting microservice** by refactoring XML parsing logic in Node.js to improve data ingestion efficiency.

PROJECTS

AI-Native Serverless Job Tracker [GitHub] | Go, GCP, Gemini 2.5, React, TailwindCSS

- **Architected an SaaS product** on Google Cloud that piping Gmail webhooks through **Pub/Sub** to a **Go microservice**, utilizing **Gemini 2.5 flash** to parse unstructured email semantics and sync real-time application status to a **Firestore-backed React dashboard**.

Regex Backtracking Visualizer [Demo] | HTML, CSS, React, TypeScript, AST Parsing

- **Developed a React/TypeScript** visualizer that exposes regex engine internals, rendering step-by-step recursive backtracking and AST parsing to demonstrate the mechanics of pattern matching execution.

NLU Code Explainer LLM [GitHub] | Python, Llama 2, QLoRA, PEFT

- **Fine-tuned Llama 2** using **QLoRA** and **AST-based** feature extraction to generate human-readable code explanations, improving semantic accuracy by **20%** over base benchmarks.

CLIP-based Image Understanding [GitHub] | PyTorch, ViT-B/32, Mask R-CNN

- **Implemented text-to-image retrieval and zero-shot classification** utilizing cosine ranking and OOD (Out-of-Distribution) abstention mechanisms, achieving **Recall@1=0.91** on CIFAR-10.

TECHNICAL SKILLS

Languages: Python, Java, C++, JavaScript, TypeScript, SQL

Frameworks: React, React Native, Node.js, Django, Spring Boot, GraphQL

Cloud & DevOps: AWS (Lambda, DynamoDB, EC2), Docker, Kubernetes, Jenkins, CI/CD

Certifications: AWS Developer Associate, Oracle Cloud Infrastructure, Red Hat Enterprise Developer, Azure az-900