Sushma Reddy Garlapati

Buffalo, NY 7162755192 garlapatisushmareddy@gmail.com LinkedIn

EDUCATION

State University of New York at Buffalo Aug 2023 – Dec 2024
Masters in Robotics
- Relevant Courses: Robotic Algorithms, Machine Learning, Robotic Control Systems, Computer Vision, Image processing, Analysis of Algorithms, Artificial Intelligence, Deep Learning, Data Structures and Algorithms.

Jawaharlal Nehru Technological University Aug 2019 – Jul 2023
Bachelor of Technology in Computer Science and Engineering
- Relevant Courses: Operating Systems, Databases, Computer Architecture, Data Structures, Computer Networks, Web Technologies, Cloud Computing, IoT, Embedded Systems.

SKILLS

Programming Languages: Java, Python, C++, HTML, CSS, TypeScript, JavaScript

Databases: MySQL, PostgreSQL, DynamoDB, MongoDB, Elasticsearch

Cloud & DevOps: AWS (EC2, Lambda, S3, RDS, DynamoDB, API Gateway, IAM, ECS, EKS, Terraform, CloudFormation, CloudWatch, CodePipeline), Azure Functions, GCP (Cloud Storage, GKE)

Machine Learning &. AI: AWS SageMaker, TensorFlow, PyTorch, OpenCV

Tools & Debugging: Git, Jira, REST APIs, GraphQL, JUnit, PyTest, Logging, Amazon X-Ray, CI/CD

Frameworks & APIs: Spring Boot, GraphQL, REST APIs, Node.js, React.js, Express.js

PROFESSIONAL EXPERIENCE

Research Assistant Aug 2024 – Dec 2024
State University of New York at Buffalo
- Developed and deployed a **high-performance microservices system** (Java, Spring Boot, AWS Lambda, DynamoDB), reducing **latency** by **30%** and accelerating **API response** times by **2.5x** for **1M+** daily users.
- Optimized a **fault-tolerant AI pipeline** with **AWS SageMaker** and **S3**, enabling **1.2M+** daily inference requests with **95%** uptime.
- Implemented **AWS DynamoDB** for **real-time data storage**, increasing **query performance** by **40%** while reducing cost by **20%**.

PROJECTS

Cloud-Native Content Management System
- Engineered a **serverless CMS** (AWS S3, Lambda, CloudFront), reducing **content delivery time** by **40%** and **scaling** to **10M+** monthly users**.**
- Automated workflow management with **AWS Step Functions**, reducing manual processing time by **50%.**
- Integrated **Elasticsearch**, reducing content search latency by **35%** and handling **5M+** search queries per month.

TacoDB - High-Performance Relational Database
- Architected a **scalable relational database** with B-Tree indexing and query optimization, improving execution speed by **60%.**
- Processed **500,000+ concurrent queries**, optimizing **buffer management** and reducing query latency by **30%.**
- Designed an **ACID-compliant** transaction handling system, improving consistency and reliability under **1M+** daily transactions with **99.98%** accuracy.

AI-Powered Weather Prediction System
- Trained a **machine learning** model on **AWS SageMaker**, achieving **98%** accuracy in extreme weather forecasting.
- Streamlined data processing pipelines using **AWS Glue**, reducing training time by **20%** while handling **50K+** daily data points.
- Deployed a **real-time API** for weather predictions, reducing data retrieval latency by **25%** and serving **1M+** user requests per month.

Scalable Distributed Systems with AWS
- Designed a **fault-tolerant distributed system** with **event-driven architecture**, ensuring **97.89%** while processing **500K+** concurrent requests.
- Implemented **Kafka-based messaging queues**, reducing message delivery latency by **40%** and improving system throughput.
- Developed a **real-time monitoring** and logging system using AWS CloudWatch and Prometheus, detecting and mitigating **98%** of system anomalies within seconds.

AWARDS AND ACHIEVEMENTS

Published Research: Super 6G Tech-Sixth Generation Wireless Networks in the International Journal of Science and Research (IJSR), Vol. 11, Issue 12 (DOI: 10.21275/SR221209131816)

Hackathon Champion: Secured 1st place in Hackathon2K22 among 50+ teams by developing an efficient Bus Reservation System prototype using Python, SQL, and REST APIs.

Best Capstone Project: Awarded 1st place in the University at Buffalo CS program for the Best Capstone Project among 100 students.