Surya Sasaank Yanamandra

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SUMMARY:

Computer Science Graduate (2025) with hands-on experience in architecting scalable backend systems and real-time processing pipelines. Proficient in Java and Python, with hands-on experience in Spring Boot, AWS, Docker, and PostgreSQL. Strong foundation in system design, performance optimization, and automated testing through CI/CD workflows.

EDUCATION:

MVGR College of Engineering, Vizianagaram, India **2021 - 2025**

Bachelor of Technology in Computer Science and Engineering (GPA: 7.61/10)

Relevant Courses: Data Structures & Algorithms, Object-Oriented Programming (OOP), Database Management Systems (DBMS), Operating Systems, Computer Networks.

SKILLS:

Languages & Frameworks: Java, Spring Boot, Python, Flask, FastAPI, SQL, PostgreSQL, Redis.

Tools & Cloud: AWS (Lambda, EC2), Docker, JUnit, PyTest, Git, GitHub Actions, OpenVINO.

PROFESSIONAL DEVELOPMENT & TRAINING:

Salesforce - Journey 2 Employment Program| Program Participant | On-site | Feb 2024 - Aug 2024

- Selected in the top 15% (49/360+) of applicants for training on Data Structures and Code Optimization; applied Agile methodologies to refine algorithms for time and space complexity in peer reviews.

PROJECTS:

URL Shortener (Java Spring Boot, Redis, Docker, JUnit)

- Architected a containerized URL shortening service using **Spring Boot 3.2**, **PostgreSQL**, and **Redis**, integrating a **GitHub Actions CI pipeline** to automate build verification and enforce **unit test execution** prior to deployment.
- Designed a high-performance redirection layer using a **cache-aside Redis strategy** to mitigate database read spikes and deliver **sub-millisecond lookup latency** for frequently accessed URLs.
- Implemented **Base62 encoding** supporting 56+ billion URLs and validated logic using **JUnit 5** and **Mockito** test suites.

Driving Narrator - Real-Time Traffic Sign Detection (Python, OpenVINO, Multi-threading, YOLOv11)

- Engineered a real-time inference pipeline on **CPU-only hardware**, achieving **14 FPS (6× speedup)** by migrating from PyTorch to **OpenVINO INT8 quantization**.
- Designed a **multi-threaded producer–consumer architecture** to decouple video I/O from inference, reducing blocking delays and stabilizing latency to **<75ms per frame**.
- Trained a custom **YOLOv11 Nano** model on **15,000+ images** (47 classes), achieving **97% mAP@0.5** and reducing model size by **38%** (to 3.2MB) for efficient edge deployment.

Serverless Student Success Prediction System (Python, AWS Lambda, Docker, GitHub Actions, PyTest)

- Architected a **serverless inference pipeline** using **AWS Lambda**, **FastAPI**, and **Docker**, leveraging event-driven execution to minimize idle infrastructure costs and implementing **ECR lifecycle policies** for image management.
- Developed a **Stacking Ensemble model** (XGBoost, CatBoost) achieving **0.77 Macro-F1**, integrated into a **GitHub Actions CI pipeline** to automate build validation and enforce code quality standards.
- Implemented **MLOps best practices** including automated unit testing with **PyTest**, structured logging, and real-time request monitoring via **AWS CloudWatch** to ensure operational reliability.

Inventory Management System (Flask, PostgreSQL, Docker, Render, GitHub Actions)

- Developed a **RESTful inventory management API** using **Flask** and **PostgreSQL**, designing a normalized **3NF relational schema** and implementing **JWT-based authentication** for secure protected endpoint access.
- Configured a **GitHub Actions CI pipeline** to execute automated **PyTest suites** with coverage reporting (**96% line coverage**), enforcing test execution and build validation on each commit.
- Designed **SQL-based analytics** features for inventory insights, writing optimized **raw SQL queries** (utilizing **indexed lookups**) to generate top-selling reports and low-stock alerts with near **real-time query performance**.

CERTIFICATIONS:

PCAP - Programming Essentials in Python • NPTEL - Cloud Computing • Cisco CyberSecurity Essentials • Cisco Linux Essentials • IELTS: Band 7.5