Surya Sasaank Yanamandra

Github • LinkedIn • Portfolio • ysuryasasaank@gmail.com • +91 63038 68148

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 redirection layer using a **cache-aside Redis strategy** to reduce database read load and achieve **sub-millisecond cache lookups** 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 **CPU-optimized real-time inference pipeline**, 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, achieving **97% mAP@0.5** and reducing model size by 38% (**5.2MB → 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 to reduce idle compute costs, implementing **ECR lifecycle policies** for automated image cleanup.
- **Developed a stacking ensemble** (XGBoost, LightGBM, CatBoost → Logistic Regression) achieving **0.77 Macro-F1**, optimized hyperparameters with **Optuna**, and validated integrity through a GitHub Actions CI pipeline.
- **Implemented an end-to-end ML deployment pipeline** featuring automated unit testing (PyTest), structured logging for request monitoring via **AWS CloudWatch**, and a lightweight frontend for real-time inference demonstrations.

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