

Surya Sasaank Yanamandra

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SUMMARY:

Computer Science graduate with hands-on experience in Python, Java, and SQL for backend development. Built diverse projects from real-time computer vision to scalable REST APIs using Spring Boot and Redis. Focused on data structures and SDLC fundamentals to build efficient and maintainable software.

EDUCATION:

MVGR College of Engineering, Vizianagaram, India

2021 - 2025

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

Relevant Courses: AI Tools and Techniques, Machine Learning, Data Structures, Database Management System, Object Oriented Programming

SKILLS:

Languages & Frameworks: Python, Java, SQL, C++, JavaScript, FastAPI, Flask, Redis, PyTorch, OpenVINO.

Tools & Concepts: AWS (Lambda, EC2), Docker, Git/GitHub, REST APIs, Data Structures & Algorithms, SDLC, Agile/Scrum.

PROFESSIONAL DEVELOPMENT & TRAINING:

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

- Selected top 10% (55/500+) for training; optimized Python/Java algorithms for time/space complexity and applied Agile methodologies in team code reviews.

PROJECTS:

Driving Narrator - Real-Time Traffic Sign Detection (Python, YOLOv11 Nano, OpenVINO, OpenCV)

- Achieved **14 FPS on 720p video** on CPU-only hardware using **OpenVINO INT8 quantization**, delivering a **6x speedup** over PyTorch while reducing model size by **38%** (5.2 MB → 3.2 MB).
- Engineered a **multi-threaded producer-consumer pipeline** that offloads video decoding to background threads, eliminating I/O blocking and stabilizing real-time inference latency.
- Trained a custom YOLOv11 Nano model on **15,876 images (47 classes)** with stratified data splitting, achieving **97% mAP@0.5** on held-out test sets to validate robust generalization.

Serverless Student Success Prediction System (Python, FastAPI, Stacking Ensemble, Optuna, Docker, AWS Lambda)

- Engineered a **Stacking Ensemble model** (XGBoost, LightGBM, CatBoost → Logistic Regression) with feature engineering and **SMOTE**, achieving **0.77 Macro-F1 score** on the UCI dataset.
- Implemented a **FastAPI** inference service and containerized it on an **EC2 build environment** using a **multi-stage Docker** build before deploying to **AWS Lambda (ECR)**.
- Built a **HTML and JS frontend** hosted on GitHub Pages to deliver real-time predictions through the serverless API.

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

- Deployed a production style inventory management web app using **Flask** and **PostgreSQL**, implementing a **3NF schema** for products, suppliers, and stock transactions with **JWT based authentication**.
- Designed **raw SQL driven analytics** (low stock alerts, top selling products, stock value by category, supplier wise stock, and transaction timelines) on **100+ auto seeded SKUs**.
- Containerized the application with **Docker**, added automated database seeding and health checks, and deployed to **Render** with CI via **GitHub Actions**.

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

- Developed a **Base62 encoding** utility to map database IDs to unique short codes, supporting a high-capacity namespace of over 56 billion URL-safe entries.
- Implemented a **Read-Through caching strategy** using Redis to serve frequent redirections, achieving millisecond-level response times and reducing database load.
- Used **Docker** for **PostgreSQL** and **Redis** while managing custom aliases and link expiration.

CERTIFICATIONS:

PCAP - Programming Essentials in Python • NPTEL - Cloud Computing • Cisco CyberSecurity Essentials • Cisco Linux Essentials •

IELTS: Band 7.5