

MELVIN DSOUZA

Software Engineer with strong foundations in data structures, algorithms, and backend development, experienced in building scalable, distributed, and production-grade systems using Python and modern cloud technologies.

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EDUCATION

Bachelor of Engineering (B.E.) in Computer Science and Engineering

Maharaja Institute of Technology Thandavapura, Mysore

CGPA: 8.7 / 10 | 2025

SKILLS

Languages: Python, Java, C, SQL

Core CS: Data Structures, Algorithms, Object-Oriented Programming, Complexity Analysis, System Design

Backend & Frameworks: Flask, FastAPI, Django, REST APIs, Microservices Architecture

Databases: MySQL, PostgreSQL

Cloud & DevOps: Docker, CI/CD, Jenkins, IBM Cloud, Git, GitHub

AI/ML (Applied): Transformers, Whisper STT, TTS Systems, Scikit-learn, RAG, Neural Networks

INTERNSHIPS/EXPERIENCE

AI/ML Intern – Simpragma Solutions Private Limited (7 Months)

- Built multilingual NER modules integrated into a production TTS pipeline, improving dynamic pronunciation handling.
- Fine-tuned Whisper STT and engineered a noise-reduction pipeline, increasing transcription accuracy in noisy calls by 20%+.
- Developed a real-time privacy-focused number masking system to detect and securely mask sensitive data in voice streams.
- Refactored and deployed a Resume Analyzer as a FastAPI-based REST microservice for scalable frontend integration.
- Designed an automated appointment-booking voicebot with webhook-based Google Sheets integration for real-time data persistence.

AI-DevOps Engineer - Rooman Technologies & IBM (4 Months)

- Containerized backend and AI services using Docker and automated CI/CD pipelines with Jenkins for streamlined deployments.
- Deployed and managed cloud-native, multi-tier applications on IBM Cloud with Git-based version control and Agile workflows.
- Applied prompt-engineering and validation strategies to improve LLM response reliability in production testing environments.

PROJECTS ([Github](#))

Cloud-Native E-commerce Application | HTML, CSS, JS, Fastapi, Docker

- Developed a full-stack e-commerce application with modular backend & frontend services deployed using Docker on IBM Cloud.

Semantic Analyzer for Sanskrit Scripts | CNN, LSTM, Hugging Face Transformers

- Built a Sanskrit OCR pipeline using a CNN+LSTM model and used FLAN-T5 and NLLB-200 for multilingual translation and cleanup.

Hand Gesture Based Virtual Operations | OpenCV, MediaPipe

- Developed a touch-free interaction system using hand-landmark detection, enabling gesture-based actions via webcam.

CERTIFICATIONS

- Jr. Penetration Tester – TryHackMe
- Cloud-Native Application Development – IBM
- AI-DevOps Engineer – Rooman Technologies

CYBER SECURITY (HOBBY/INTEREST)

- Completed 90+ TryHackMe rooms across Jr Pentester, Cyber Security 101 & Web Fundamentals; hands-on with Nmap, Burp Suite, Hydra, Wireshark, Metasploit.