Vandana Chidanand Mansur

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EDUCATION

University of California — Davis, California
Master of Science, Electrical and Computer Engineering (ML Track) — *09/2025 - 03/2027*
***Coursework**: Big Data & High-Performance Statistical Computing, Modeling & Optimization in Computer Engineering*

Vellore Institute of Technology | GPA: 8.85/10 — Vellore, India
Bachelor of Technology, Electronics & Communication Engineering — *07/2018 - 05/2022*

TECHNICAL SKILLS

Languages: *Java, Python, SQL*
Technical Skills & Frameworks: *Springboot, Machine Learning, Pytorch, NLP, LLM, RAG, AI Agents, Cloud, Agile, Research*
Tools: *Git, GitHub, Docker, Kubernetes, AWS, Argo CD, Security-Prisma Compute, Postman, Splunk, DevSecOps, ServiceNow, Gen AI*

WORK EXPERIENCE

Optum, UnitedHealth Group — Hyderabad, India
Full Stack Engineer — *09/2024 – 09/2025*

- *Built and deployed a clinical question-answering assistant using a **RAG architecture** (**OpenAI GPT-4o mini, ChromaDB, OpenAI text-embedding-3-small**), implementing backend retrieval workflows integrated with LLM prompts to deliver accurate, context-aware medical query responses.*
- *Developed and maintained modern, **scalable web interfaces** (React, Next.js) for member portals serving **50M+** users across **4 business** lines. Optimized member coverage and benefits journeys to **enhance user engagement**, **informed decision-making**, and accessibility.*
- *Applied **low-level** design principles to migrate **legacy SOAP APIs to GraphQL**, optimizing request/response logic, payload handling, and resolver architecture, boosting **API performance** by **30%** and advancing scalable, efficient data access for core applications.*
- *Automated deployment pipelines and led seamless migration from **on-premises to AWS** (EKS, ASM, S3, IAM, CloudFront), ensuring robust, **high-availability releases and improved scalability**.*

Optum, UnitedHealth Group — Hyderabad, India
Software Engineer — *06/2022 – 09/2024*

- *Delivered secure **REST APIs** in **Java** and **Springboot** with HIPAA compliance, reducing **database call latency** by **20%**. Enhanced **digital health** platform by integrating EMRs using **bi-directional APIs integrating to Salesforce app**, automated onboarding, visit summaries, care team-member communication, and **streamlining clinician workflows** for **multi-market** Senior Community Care expansion.*
- ***Architected DevOps Infrastructure** for new applications using **Docker** and Git, implementing **automated CI/CD pipelines** that **reduced build cycles by 60%** across **35** projects and **QA process turnaround time** by **70%**. Improved **code quality coverage to 90%**. **Enabled zero downtime and high availability**, managed API gateway, created **unified Grafana dashboards** to monitor performance, achieved **100% vulnerability resolution,** and **saved 30% on cloud operations storage costs**.*

PROJECTS

LlamaCore Inference — 2025

- *Set up and built the llama.cpp library for **local and GPU-enabled** environments, preparing and **quantizing large language models** into **GGUF** format for **efficient inference** compatibility.*
- *Explored and studied **llama.cpp** tools (llama-cli, llama-server) and optimization techniques including hardware support to enable efficient multi-architecture LLM inference.*

SQL Bot — 2022

- *Created a **Rasa-Core** module with **NLP** training data, converting plain English to SQL queries.*
- *Built an external application, Rasa-action-server, with rasa-python-sdk to connect with the DB and the server's response.*

Medical Chain-Deep Learning & Ethereum Blockchain Integrated Secure Electronic Health Record System for COVID-19 — 2022

- *Implemented **UNet** for lung segmentation (CXRs**), InceptionV3** model with an accuracy of **92-95%**.*
- *Introduced the **OCR-BERN** system for patients' utility. Used **IPFS** to provide a scalable, secure solution for storing CXR images, Metamask wallet, React.js, **Solidity** and **Flask** API to integrate the Dapp (demo).*

Highway drivers' drowsiness detection using RPi and CNN technique — 2021

- *Modelled a drowsiness detection system using **OpenCV**, **Keras**, **Tensorflow**, and a **CNN** deep learning algorithm using **7000** open-source eye data images.*
- *Deployed the model on **Raspberry Pi**, integrating with Pi camera for a real-time, standalone system with an accuracy of **95%**.*

Intruder ReID and Tracking — 2021

- *Designed an **individual reidentification** system and visualized detection locations for surveillance applications.*
- *Leveraged the **Market1501** and **COCO** datasets, employing **ResNet50** and **YOLOv3** algorithms.*

PUBLICATIONS

Integration of Deep learning and Blockchain technology for a Smart Healthcare Record Management System (link) — *Elsevier, 09/2024*
Highway Drivers Drowsiness Detection System Model with R-Pi and CNN technique (link) — *IEEE Xplore, 11/2021*