

ERANDA JAYASINGHE

Associate Software Engineer | AI/ML Engineer

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PROFILE SUMMARY

Final-year Software Engineer with 8 months of professional experience building enterprise-grade, AI-powered full-stack systems at Simsyn (Pvt) Ltd. Proficient in React, TypeScript, Node.js, and PostgreSQL for production web systems, and PyTorch, TensorFlow, LangChain, and LangGraph for applied AI/ML. Hands-on with Meta Business APIs, real-time telephony (3CX/ElevenLabs/Gemini Live), Docker, and CI/CD pipelines. Also I done for my knowledge gained 20+ certifications and a GitHub portfolio of scalable, production-ready AI solutions.

EDUCATION

B.Sc. Engineering (Hons) in Computer Engineering

University of Jaffna, Jaffna, Sri Lanka

April 2022 – Present (Expected Graduation: September 2026)

Relevant Coursework: Machine Learning, Deep Learning, AI, Data Structures & Algorithms, Software Engineering

PROFESSIONAL EXPERIENCE

❖ Software Engineer Intern

27 Oct 2025 – 15 May 2026

Simsyn (Pvt) Ltd - Sri Lanka | *Enterprise AI-powered CRM & multi-channel communication platform*

Stack: React · TypeScript · Node.js · PostgreSQL · Redis · Moleculer · ElevenLabs · Google STT · 3CX PBX · MCP · RAG · Redux Toolkit · Prisma · Docker

1. AI Voice Agent & Real-Time Telephony

- Built a real-time AI voice agent platform integrated with 3CX PBX using Node.js Moleculer microservices and multi-provider STT/TTS pipelines.
- Engineered live interrupt handling, automatic STT recovery, and cancellable TTS for stable real-time conversations.
- Implemented ElevenLabs WebSocket STT with FFmpeg audio resampling and Google gRPC-compatible streaming.

2. WhatsApp Integration to the System

- Built a full-stack WhatsApp Business API integration with template management, media uploads, Redis caching, and CRM variable resolution.
- Developed a React/TypeScript frontend with live previews, placeholder injection, and Redux Saga state management.
- Implemented inbound/outbound messaging pipelines with webhook verification, session tracking, retries, and delivery status updates.
- Built a WhatsApp-to-AI-Agent bridge supporting threaded replies and workflow-driven AI execution.

3. Multi-Channel Conversations & Dashboard

- Built a reusable Conversations Dashboard supporting WhatsApp, SMS, Email, Agent, and CRM inboxes with real-time polling and infinite scrolling.
- Implemented dynamic rendering for channel-specific message layouts and CRM context injection.
- Developed a tri-channel template sending system with placeholder mapping and session-aware error handling.
- Built a unified CRM conversation interface with reusable dashboards and split-panel thread views.

4. Bug Fixes & Cross-Codebase Stabilization

- Resolved critical messaging, workflow, and conversation routing bugs across multiple modules.
- Stabilized AI agent services by resolving Prisma client exhaustion, workflow refresh failures, and provider state issues.
- Fixed release focus on frontend and backend defects involving Redux initialization, migrations, API failures, and permission logic.

PROJECTS

➤ AI / ML

Seamless AI Platform for Multi-Modal Interaction

LangChain · Ollama · Whisper · ChromaDB · Streamlit · Python A custom GPT-powered AI platform supporting document Q&A, summarization, semantic search, and real-time voice translation (English ↔ Sinhala) across 50+ PDFs, CSVs, and text files using local LLMs and ChromaDB.

Skin Cancer Detection with Deep Learning (Ongoing Research)

TensorFlow · Keras · OpenCV · CLAHE · Deep-SMOTE · ISIC 2024 Research project training CNN models (EfficientNet-B0, ResNet-50, InceptionV3, AlexNet) on the ISIC 2024 3D Total Body Photography dataset using CLAHE preprocessing and Deep-SMOTE class balancing to improve diagnostic accuracy.

AI Chatbot for Attendance Management

Flask · PyTorch · NLP · Docker · GitHub Actions · HTML/CSS An NLP-powered chatbot with custom PyTorch intent classification (tokenization, stemming, Bag-of-Words), REST API integration, and full CI/CD deployment via Docker and GitHub Actions.

Plant Leaf Disease Detection System

YOLOv5 · TensorFlow · Streamlit · OpenCV · Python A real-time plant disease detection system trained on 87K+ leaf images achieving 95% accuracy, with a Streamlit app supporting webcam and image upload for instant field diagnosis.

➤ Web Development

Bag Store – React E-Commerce Platform

React · Firebase · Context API A full-stack e-commerce web app for online bag shopping with product browsing, cart management, secure checkout, order tracking, user profiles, and an admin dashboard for product and order management.

Uni Kade – University Food Ordering & Marketplace Platform

Node.js · Express.js · MongoDB · React · Tailwind CSS · Socket.io · JWT · Cloudinary A full-stack campus marketplace connecting students with campus sellers, featuring role-based access (Student/Seller/Admin), real-time order notifications, product and inventory management, and live order status tracking.

Student Attendance Management System

HTML · CSS · PHP · MySQL A web-based system for managing student attendance, course scheduling, and lecture tracking, with secure authentication, real-time attendance marking, and auto-generated attendance reports.

Universal Booking and Management System

Spring Boot · MySQL · REST API · React · Java · JavaScript A full-stack service booking platform with secure user authentication, role-based access control, and MySQL-backed modules for profile management and booking workflows.

Real-Time Video Conferencing Application

WebRTC · Socket.IO · Express.js · JavaScript · HTML · CSS A peer-to-peer video conferencing app supporting multi-user video calls, screen sharing, text chat, and mic/camera controls built on WebRTC for real-time audio and video streaming.

➤ Flutter

Ariviyal Nagar Food Ordering App

Flutter · Firebase · Google Maps · Provider A mobile food ordering app with secure user authentication, real-time cart management, and Google Maps location integration, backed by Firebase for authentication, cloud storage, and real-time updates.

AquaFocus – Digital Wellness & Phone Addiction Tracker

Flutter · Firebase · Riverpod · FlChart · Local Notifications A gamified mobile app that helps users reduce phone addiction by unlocking virtual fish tank rewards for meeting screen-time goals, with real-time device usage monitoring and visual analytics.

Machinement – Smart Task & Order Management System

Flutter · Firebase Firestore · Provider A task and order management app built for tailoring and production workflows, featuring real-time order tracking, customer measurement templates, payment management, and multilingual support with dark/light themes.

CERTIFICATIONS ([Linkedin](#))

- Natural Language Processing Specialization
- The Local LLM Crash Course
- Introducing MLOps: From Model Development to Deployment
- AWS Bedrock Workshop (Gen AI Chatbot Build)
- Deep Learning Mastery

Completed over 20+ certifications across AI, ML, and software development with hands-on experience in chatbot development, NLP, computer vision, and LLMops. Earned credentials in Generative AI, prompt engineering, Python, Java programming, and cloud deployment (Azure, GitHub Actions, Docker). Built multiple end-to-end ML projects including image captioning, disease detection, and sentiment analysis using modern frameworks like TensorFlow, PyTorch, OpenCV, and LangChain.

TECHNICAL SKILLS ([LinkedIn](#))

- Programming Languages : Python, JavaScript, Java, C++, TypeScript
- Frameworks & Tools : PyTorch, LangChain, Ollama, TensorFlow, Keras, Scikit-learn, NLTK, OpenNLP, React, Node.js, FastAPI, Flask, Redux Toolkit, Moleculer, Spring boot
- Databases : MySQL, PostgreSQL, MongoDB
- Tools & Technologies : Git, Postman, VS Code, Jupyter Notebook, Docker
- Cloud Services : AWS, Azure, MLOps (Model Deployment, Monitoring, CI/CD)
- Network & Security : Wireshark, HTTPS, WebRTC
- Soft Skills : Team Collaboration, Problem Solving

AWARDS/ACTIVITIES ([LinkedIn](#))

- Participated in coding competitions hackathons,
- CodeRally 5.0 : Sri Lanka Rank 12
Team Code_Mazer
 - UOJ Coders 4.0 : Sri Lanka Rank 12 | Finalists
Team Code_Mazer
 - MoraXtreme 9.0 : Sri Lanka Rank: 82
Team ViperBytes
 - SpiritX 2025 : Participated Stage1 web development hackathon

REFERENCES

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