

# LAXMAN MADASU

AI/ML Engineer

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## TECHNICAL SKILLS

**Programming & Data Science:** Python, NumPy, Pandas, Matplotlib, Seaborn, NLTK, Scikit-learn, OpenCV

**Machine Learning:** Supervised & Unsupervised Learning, Feature Engineering, Data Preprocessing, Hyperparameter Tuning, Model Deployment

**Deep Learning:** ANNs, CNNs, RNNs, Data Augmentation, Regularization Techniques, TensorFlow

**Generative AI & LLM:** LLMs, RAG, LangChain, AI Agents, Multi-Agent Workflows, Prompt Engineering, Function Calling / Tool Calling, Structured JSON Generation, OpenAI, Google Gemini, Anthropic Claude, Groq, DeepSeek, Ollama

**Backend & APIs:** FastAPI, REST APIs

**Databases & Retrieval:** MySQL, MongoDB, ChromaDB, Vector Search, BM25, Hybrid Retrieval

**Document Intelligence:** OCR, PaddleOCR, Tesseract, PyMuPDF, pdfplumber

**Application & Cloud:** Streamlit, AWS (EC2, S3, Lambda, SQS), Docker, Docker Compose, Git, GitHub

## PROFESSIONAL EXPERIENCE

### Geeth LLC | Waukesha, WI, United States | Remote

AI & ML Engineer | Dec 2024 – Present

#### Maya — AI Website Generation Platform

**Tech Stack:** Python · LLMs · RAG · Streamlit · JSON · MongoDB · ChromaDB

- Worked on **Maya**, an AI-powered website generation platform that enables users to create websites, portfolios, sections, buttons, and other UI components using **natural-language prompts**.
- Developed the **RAG + LLM generation workflow** that understands a library of custom UI components built by frontend developers and generates websites based on their **JSON component definitions**.
- Implemented retrieval-based prompting so LLMs could identify and reuse the appropriate **Angular-based components and their JSON schemas**, enabling consistent and structured UI generation instead of generating arbitrary components.
- Contributed to the **Streamlit-based frontend**, allowing users to interact with the AI generation workflow and view **recent sessions, live website previews, generated JSON, and generated code**.
- Developed **structured JSON-based page generation workflows using LLMs and RAG**, improving component selection and reducing unsupported or hallucinated UI components.

#### GeethAI — AI Application & Agent Platform

**Tech Stack:** FastAPI · Python · MongoDB · Streamlit · LLMs · AI Agents · Tool Calling · Multi-Tenant Architecture

- Worked on a **multi-tenant AI application platform** that enables users to build, configure, deploy, and integrate AI-powered applications such as **AI agents, conversational chatbots, and workflow-based applications**.
- Developed AI application workflows supporting **conversational chat, tool-calling agents, and deterministic flows**, enabling applications to perform actions and interact with external systems rather than only generate text.
- Built use cases including **e-commerce AI assistants** for product discovery and ordering, website chatbots for customer interaction, and **automated offer-letter generation**.
- Enabled businesses to build domain-specific AI applications such as **loan and mortgage workflows** that collect customer information, process application data, and support human-in-the-loop review and approval processes.

- Designed the platform to allow AI applications to be **embedded and integrated into existing business applications**, enabling organizations to add AI capabilities without building individual AI systems from scratch.
- Implemented a **provider-agnostic LLM architecture** supporting multiple LLM providers, allowing applications to switch models without changing application-level logic.
- Implemented production reliability and **multi-tenant isolation using circuit breakers, distributed locking, idempotency, retry/timeout handling, dead-letter queues, and database-level tenant isolation.**

### AI Smart Scanner — Finance Application

**Tech Stack:** Python · FastAPI · Streamlit · MongoDB · OCR · LLMs · LangChain · Docker

- Built an **AI-powered smart scanner for a finance application** that extracts structured information from **receipts and financial documents** and stores processed data in MongoDB.
- Developed a **Streamlit Smart Scanner** that allows users to scan/upload receipts, automatically extract relevant fields, and populate the extracted information into a structured form for user review and correction.
- Implemented an **OCR-based document processing pipeline** using PaddleOCR, Tesseract, PyMuPDF, and pdfplumber to extract text and map document content to predefined fields.
- Integrated **LLMs with document processing workflows** to handle complex financial documents and convert unstructured document data into structured JSON suitable for downstream processing.
- Designed the workflow to persist validated extracted information into **MongoDB**, enabling users to review, update, and manage processed financial records.
- Developed transaction classification capabilities combining **rule-based logic and fuzzy matching** to categorize financial transactions and improve classification using user feedback.

## PERSONAL PROJECTS

### Code Reviewer & Bug Fixing Tool

**Tech Stack:** Python · OpenAI API · Streamlit

- Built an AI-powered code review application that analyzes user-submitted code, identifies potential bugs, and provides actionable feedback and suggested fixes.
- Integrated the **OpenAI API** to automate code analysis and generate contextual debugging recommendations.
- Developed an interactive **Streamlit interface** for submitting code and receiving real-time review results.

## EDUCATION

### Master of Computer Applications (MCA)

Jawaharlal Nehru Technological University Hyderabad (JNTUH) | 2024 – 2026

### Bachelor of Science (Data Science)

Sree Chaitanya Institute of Technological Sciences, Karimnagar | 2020 – 2023

## CERTIFICATIONS & TRAINING

- **Machine Learning with Python** — IBM Developer Skills Network
- **Certificate of Course Completion in Data Science** — Innomatics Research Labs
- **Exploratory Data Analysis Module Completion Certificate** — Innomatics Research Labs