

Venkatalakshmi Kottapalli

Parsippany, NJ, 07054 | 2019544144 | venkatalakshmik23@gmail.com | [LinkedIn](#) | [GitHub](#) | [Portfolio](#) | [Research](#)

SUMMARY

Results-driven **AI/ML Engineer** with **4+ years** of experience designing and deploying scalable **AI solutions**, including **AI agents**, **LLM applications**, **RAG pipelines**, and **machine learning pipelines**. Proficient in **Python**, **SQL**, **Azure**, **REST APIs**, and **MLOps** practices, with expertise in **data science**, **deep learning**, **NLP**, **statistical modeling**, and **vector database**-powered retrieval. Skilled at transforming data into measurable business impact through model development, optimization, and deployment. Strong communication skills and collaboration with cross-functional teams.

EDUCATION

Master's in Artificial Intelligence | Yeshiva University, New York, USA | GPA: 4.0/4.0 | Jan 2024 - Dec 2025
Bachelor's in Mathematics | Adikavi Nannaya University, Rajahmundry, India | GPA: 3.8/4.0 | Jun 2015 - May 2018

TECHNICAL SKILLS

Programming Languages: Python, SQL, R, Cypher
Databases: PostgreSQL, Neo4j, FAISS, ChromaDB, SQLite
Data Science/ML: Scikit-learn, PyTorch, TensorFlow, Keras, NLTK, SpaCy, CNN, RNN, LSTM, GANs
GenAI & LLMs: LangChain, LangGraph, Hugging Face Transformers, RAG, AI Agents, Prompt Engineering
MLOps & DevOps: ML Pipelines, MLflow, Docker, Kubernetes, CI/CD, Git, Model Deployment, Monitoring & Logging
Cloud Platforms: Azure (ML Studio, AKS, ACR, DevOps), AWS (S3, RDS, IAM), GCP (Vertex AI)
APIs & Tools: Flask, FastAPI, REST APIs, Postman
Data Visualization: Matplotlib, Seaborn, Tableau, Power BI, Excel
Competencies: Agile (Scrum), SDLC, OOP (Object-Oriented Programming)

WORK EXPERIENCE

Machine Learning Co-op | ZSAnalytics May 2024 - Present

- Designed and deployed an **end-to-end machine learning lifecycle** for email marketing using **MLOps** best practices, achieving **95% accuracy**, **40% ROI improvement**, and **98% customer retention**, directly enhancing campaign efficiency.
- Built **ML pipelines** for data loading, data preprocessing, feature engineering, training, evaluation, deployment, and automated retraining with **Azure ML Studio** and **Azure Kubernetes Service (AKS)**, enabling scalable and repeatable workflows.
- Processed and **analyzed large-scale datasets** using **SQL**, **NumPy**, and **Pandas**, ensuring clean data for downstream modeling.
- Performed data mining, exploratory data analysis (**EDA**) and visualizations with **Matplotlib**, uncovering key and hidden insights.
- Applied **feature engineering**, creating **10+ new features** that boosted model **precision by 12%**, leading to accurate targeting.
- Trained predictive models using **Supervised algorithms** and **Clustering methods** to improve generalization, and evaluated models with **precision**, **recall**, **F1-score**, **ROC-AUC**, and **confusion matrix**, ensuring fairness and reliability across user segments.
- Tracked and compared model performance using **MLflow** for experiment tracking and model selection.
- Implemented **MLOps** pipelines with **Azure DevOps CI/CD**, **REST API** integration, and Azure Monitor for troubleshooting.
- Delivered insights through dashboards in **Power BI**, **Excel**, and **PowerPoint**, enabling data-driven marketing decision-making.

Software Developer AI | Mee Sahayakaari Mar 2019 - Dec 2021

- Built and deployed a **bilingual AI chatbot** using **Dialogflow**, **Google Translate API**, and **DuckDuckGo**, serving **50K+ users** with a **90%** customer satisfaction rate.
- Integrated **utility APIs** (PDF conversion, calendar scheduling, calculator) to extend functionality, increasing engagement.
- Developed **cross-platform applications** for the chatbot, reducing onboarding time by **40%**.
- Published on the **Google Play Store**, expanding accessibility to the audience and driving adoption among non-technical users.
- Configured **REST API integrations** for real-time query handling, ensuring faster response times and smooth interaction.
- Collected and analyzed **user interaction data** using Google Analytics, led iterative improvements that boosted retention by **20%**.
- Conducted **A/B testing** on conversation flows and utilities, optimizing performance and increasing conversion rates.

PROJECTS

Multi-Agent Conversational AI: Designed and implemented a query-routing system using GPT-4 for RAG, ChromaDB, SQLite for history tracking, and integrated with a CRM system for data management, improving response accuracy by 35%.

RAG-based Chatbot: Built a domain-specific chatbot using the RAG framework, FAISS embeddings, LLM, and prompt engineering. Integrated knowledge database to provide context-aware responses with 90% accuracy, enhancing information retrieval.

Database Design & Data Analysis: Designed a relational database in PostgreSQL to store and manage EV data using SQL and performed exploratory data analysis (EDA) to uncover patterns, and conducted analysis using Python coding and PowerBI.

Database Migration: Implemented an ETL pipeline to migrate a relational SQL database to a Neo4j graph database, utilizing Cypher queries to restructure data and optimize graph-based relationships.