SUPRIYA P

Assistant Professor| AI Engineer
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Professional Summary

AI and Machine Learning professional with 8+ years of academic experience and 2+ years of software development experience. Skilled in Generative AI, Large Language Models (LLMs), LangChain, Retrieval-Augmented Generation (RAG), Python, Machine Learning, Deep Learning, Vector Databases, Cloud Deployment, and Full-Stack Development. Experienced in developing AI solutions, mentoring AI projects, conducting faculty development programs, and publishing research in Machine Learning and Fraud Detection. Seeking to transition into AI Engineer / Generative AI Engineer roles.

Technical Skills

Programming: Python, SQL, Java, JavaScript
Machine Learning: Scikit-Learn, XGBoost, Random Forest, Decision Trees
Deep Learning: TensorFlow, PyTorch, Keras
Generative AI: LLMs, Prompt Engineering, LangChain, RAG, FAISS, Hugging Face, AI Agents
Cloud & MLOps: GCP, Docker, Git, MLflow, Cloud Run
Databases: MySQL
Web Technologies: HTML, CSS, JavaScript, PHP
Tools: Jupyter Notebook, VS Code, GitHub

Key Projects

RAG-Based YouTube Quiz Generator

• Developed an end-to-end Retrieval-Augmented Generation (RAG) application that generates quizzes from YouTube video content.
• Extracted transcripts using yt-dlp and performed chunking and embedding generation.
• Stored embeddings in FAISS Vector Database for semantic retrieval.
• Implemented contextual question generation using LangChain, LLMs, and prompt engineering.
• Built an interactive Streamlit-based user interface.
• Containerized the application using Docker and deployed it on Google Cloud Run.
• Technologies: Python, Streamlit, LangChain, FAISS, GCP, Docker, RAG, LLMs.

Ethereum Fraud Detection Using Optimized XGBoost

• Developed a cost-sensitive fraud detection framework for blockchain transactions.

Professional Experience

Assistant Professor – AI & ML | BMSCE, Bengaluru | Mar 2024 – Present

• Designed and delivered training in Machine Learning, Deep Learning, NLP, DBMS, and Generative AI.
• Guided AI/ML projects involving LangChain, RAG, LLMs, Vector Databases, and Predictive Analytics.
• Conducted GenAI workshops and FDPs covering RAG, Agentic AI, and LLM deployment.
• Published research in Machine Learning and Blockchain Fraud Detection.

Assistant Professor & HOD – BCA | Ramaiah Institute of Business Studies | Oct 2021 – Mar 2024.

• Led department operations, curriculum planning, accreditation activities, and faculty coordination.

Assistant Professor – CSE | Nitte Meenakshi Institute of Technology | 2017 – 2021

• Delivered courses on AI, Java, Data Structures, Operating Systems, DBMS, and Web Technologies.
• Organized workshops on LaTeX, Android Development, and Web Technologies.

Coding Trainer | BYJU'S | 2020 – 2022

• Trained students in JavaScript, algorithms, and coding problem-solving.

Web Developer | Jay Research Solutions Pvt. Ltd. | 2011 – 2013

• Developed and maintained web applications using HTML, CSS, JavaScript, PHP, and SQL.
• Designed and implemented database-driven modules for enterprise applications.
• Collaborated with cross-functional teams to deliver client-facing software solutions.
• Worked on SDLC phases including development, integration, testing, and production support.

Publications & Research

• Next Generation Quiz Generator: LangChain-Based Adaptive Quiz System for Digital Learning
• Optimized XGBoost for Ethereum Fraud Detection: A Cost-Sensitive Approach
Research Interests: Generative AI, Personalized Learning, Fraud Detection, Explainable AI

Education

M.Tech – Software Engineering | MS Ramaiah Institute of Technology
B.E – Computer Science & Engineering | BNM Institute of Technology