

UMAYARAJ KUMAR

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OBJECTIVE:

As an AI/ML enthusiast with a strong background in Generative AI, Machine Learning, and Deep Learning, I specialize in working with Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), neural networks, OpenCV, and IoT technologies. I am proficient in programming languages like Python, Java, and C. I am passionate about transforming raw data into actionable insights, optimizing AI-powered and IoT-based solutions, and exploring new frontiers in artificial intelligence to drive innovation.

PROJECTS:

- Intelligent Emergency Response System: Nov 2024 - Jan 2025
- Developed an AI-powered IERS using ESP32, smart sensors, CNN, and OpenCV to enhance accident detection and response. The system:
- Detects accidents in real-time using computer vision and deep learning.
 - Sends automated emergency alerts with location details via IoT devices like ESP32 and GPS modules.
 - Adapts to urban, suburban, and rural areas for efficient response.
 - Ensures rapid data transmission and real-time updates to emergency teams.
- AI-Powered Health Monitoring System: Feb - 2025
- Developed an AI-powered health monitoring platform that integrates IoT-based wearables for continuous tracking of vital signs. Key features include:
- Real-Time Monitoring: Tracks heart rate, blood pressure, sleep, and activity levels using IoT devices like Pulse Oximeter and ECG Sensors.
 - AI Personalization: Analyzes health data to provide recommendations for diet, fitness, and lifestyle.
 - Multi-Language Support: 24/7 virtual assistant in multiple languages for user interaction.
 - Data Security: Ensures secure storage and compliance with GDPR and HIPAA
- Graph-Based RAG Application: Dec - 2024
- Developed a Retrieval-Augmented Generation (RAG) system using Neo4j and Streamlit to enhance context-aware retrieval.
- Graph-Based Retrieval: Uses Neo4j to structure knowledge and improve search accuracy.
 - Hybrid Search: Combines vector search with graph traversal for better relevance.
 - Streamlit UI: Provides an interactive interface for querying and visualization.
 - LLM Integration: Enhances responses with retrieved graph-based knowledge.

Technical Skills:

Soft Skills:

- Machine Learning
 - Deep Learning
 - Generative AI
 - MIOps
 - LLMOps
 - NLP
- Computer Vision
 - Python
 - Java, C
 - Git, Github
 - SQLite
 - HTML, CSS, JS
- Problem Solving
 - Critical Thinking
 - Time Management
 - Teamwork
 - Adaptability
 - Emotional Intelligence

EDUCATION:

- B.E CSE (AI&ML)
 - Dr.Mahalingam College of Engineering and Technology, Current CGPA : 8.2/10
 - Schooling: G.S Hindu Hr. Sec. School ,Srivilliputtur, 85.6%
- 2023 - 2027

2023

Certifications:

Linguaskill English Certification (B1 Level) – Cambridge
Assessment English

May - 2024

POSITION OF RESPONSIBILITY

Office Bearer – Environmental Club (EVC)

- Led initiatives for environmental awareness and sustainability.
- Organized and participated in tree plantation drives and eco-friendly campaigns.