UDATYA DEB

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PROFESSIONAL SUMMARY

Machine Learning Engineer with 2 years of experience building deployed AI systems including agentic workflows, Retrieval-Augmented Generation (RAG), computer vision, and multimodal AI applications. Expertise in LangChain, LangGraph, natural language processing (NLP), and deploying scalable ML solutions for e-commerce and content management platforms.

CORE SKILLS

Machine Learning & AI: Agentic AI, Retrieval-Augmented Generation (RAG), Computer Vision, Natural Language Processing (NLP), Deep Learning, Word Embeddings, Collaborative Filtering, Recommendation Systems, Multimodal AI

Frameworks & Tools: LangChain, LangGraph, TensorFlow, PyTorch, Scikit-learn, Vector Databases, Facial Recognition, Image Recognition

Cloud & Infrastructure: Google Cloud Platform (GCP), Cloud Engineering, Internet of Things (IoT), API Development

Programming: Python, Machine Learning Pipelines, Workflow Orchestration, Caching Mechanisms, Metadata Extraction

PROFESSIONAL EXPERIENCE

Machine Learning Engineer **October 2024 – Present**
Calsoft Kolkata, West Bengal, India

Agentic AI E-Commerce Assistant

- Engineered AI-powered shopping chatbot using LangChain with agentic workflows, enabling automated product discovery and personalized recommendation generation
- Integrated computer vision and multimodal AI capabilities to enable image-based product recognition from user-uploaded images
- Developed recommendation pipeline leveraging collaborative filtering, user purchase history analysis, and similar-user behavior patterns to drive conversion
- Deployed scalable chatbot system processing real-time user queries with contextual understanding and natural language interactions

AI-Powered Content Management & Retrieval System

- Architected custom agentic AI chatbot using LangGraph with workflow orchestration designed from scratch for enterprise content management
- Implemented facial search using computer vision and vector-based retrieval to identify and surface relevant digital assets with high accuracy
- Automated metadata extraction and enrichment pipeline, integrating large language model (LLM)-based summarization for concise content delivery
- Optimized retrieval latency and accuracy through advanced embedding techniques and vector database indexing strategies

Machine Learning Intern **April 2024 – September 2024**
Calsoft Kolkata, West Bengal, India

Intelligent Language Translation System

- Built intelligent website translation system with selective translation logic, preserving critical domain-specific keywords and technical terminology
- Engineered caching mechanism to store previously translated content, reducing redundant API calls by 60% and lowering translation costs

- Improved translation consistency and efficiency across multilingual platform while optimizing system performance and operational expenses

EDUCATION

Bachelor of Technology (BTech), Computer Science **2020 – 2024**
Netaji Subhash Engineering College

High School, Computer Science **2009 – 2020**
Delhi Public School, Ruby Park

CERTIFICATIONS

OK Google: Build Interactive Apps with Google Assistant
Cloud Engineering – Google Cloud Platform
IoT in the Google Cloud
Google Cloud Essentials
Certificate of Participation in Level 1.1: E-Commerce