Shishir Adhikari

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SUMMARY

Machine Learning and Backend Engineer with expertise in Python, FastAPI, LangChain, and AWS. Skilled in data preprocessing, model training, deployment, and LLM-based applications. Hands-on experience building RAG systems, NLP pipelines, search and summarization tools, and scalable APIs. Strong foundation in data structures, databases, and cloud technologies with a proven track record of delivering end-to-end AI solutions.

EDUCATION

Bachelors of Science in Computer Science and Information Technology — Expected 2026
Tribhuvan University

SKILLS

Programming:	Python, JavaScript, SQL, HTML, CSS
Frameworks:	FastAPI, Flask, Streamlit, Scikit-learn
AI & ML:	NLP, RAG, Generative AI, Deep Learning, Model Deployment
Libraries:	Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Plotly, LangChain, LangSmith,LangGraph
Tools:	Git, Docker, REST API
Database:	PostgreSQL, MySQL, MongoDB, Redis, RedisJSON, AWS S3,pgvector, FAISS, ChromaDB, Pinecone
Soft Skills :	Communication, Teamwork, Problem Solving, Adaptability, Continuous Learning, Analytical Thinking, Creativity
Languages :	English, Nepali, Hindi

PROJECTS

Shikshya Chautari — Github

- Built an intelligent system to forecast potential exam questions based on past papers and syllabus content.
- Developed a seamless data pipeline with AWS S3 for storage and utilized Langchain with Vector Databases for efficient data handling.
- Leveraged OpenAI's LLM and Langsmith for operational efficiency and high-quality output.
- Empowered students to focus their study efforts using data-driven question predictions.

RAG with PostgreSQL — Github

- Architected and built a scalable RAG system using Timescale Vector (PostgreSQL) for efficient semantic search and retrieval on document collections.
- Integrated OpenAI embeddings and a configurable LLM factory to power intelligent question-answering capabilities.
- Developed a modular FastAPI backend to handle real-time data ingestion and high-performance search operations.

Conversational-RAG API — Github

- Built a production-ready, high-performance backend API using FastAPI and RAG for a conversational AI.
- Integrated traditional booking system with OpenAI GPT models to enable intelligent, context-aware chatbot interactions.
- Designed and implemented robust chat session and booking management using Redis JSON, ensuring real-time data handling and low-latency API responses.

Student Performance Analysis — Github

- The objective of this project is to analyze and visualize student performance metrics.
- Created interactive dashboards and visualizations for real-time data exploration using Streamlit and deployed.
- Designed user-friendly interfaces enabling filtering and summarizing of key academic indicators.
- Supported educators and administrators in data-driven decision-making.

Content Summarization — Github

- The objective of this project is to generate concise summaries from YouTube transcripts, speeches, and long documents.
- Efficiently extracted key points from PDFs, video transcripts, and plain text inputs.
- Designed an intuitive, interactive interface with customizable prompts for flexible summarization.
- Deployed on Streamlit Cloud for easy access and sharing.