

SUDARSHAN POUDEL

AI/ML Developer

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GitHub: [SudarshanPoudel](https://github.com/SudarshanPoudel)

Portfolio: sudarshanpoudel.github.io

I am a highly motivated AI/ML Developer with a strong background in ML, NLP, and Python. I focus on building AI systems powered by LLMs, RAG, and agentic workflows. I enjoy designing backend logic with FastAPI and creating structured, multi-step pipelines that solve meaningful real-world tasks.

EXPERIENCE

GoFuelWorks - AI/ML Engineer (Feb 2025 – Current)

- Integrated AI features into a B2B platform to enhance workflow automation and data interaction.
- Built customer portal APIs with an embedded agentic chatbot for contextual user assistance.
- Developed an OCR-powered document scanner enabling users to scan documents for automatic form fill-ups, with parsed data intelligently linked to the platform's database.
- Implemented automated email workflows for sending emails and parsing incoming messages.
- Implemented required backend tools to back AI powered features when needed.
- Worked extensively with Dockerized services, CI/CD pipelines, and remote SSH environments to streamline development and deployment of AI-powered features

Inspiring Lab - AI/ML Intern (Nov 2024 – Feb 2025)

- Developed a Data Analysis Agent to process CSVs, generate insights and produce PDF reports.
- Developed a high-accuracy PDF to Markdown parser for Nepali and English documents.
- Implemented GraphRAG using Neo4j and GraphCypherQA for graph-based retrieval and QA.
- Explored and implemented multi-agent systems, focusing on architecture and agent interactions.

Fusemachines - AI Fellowship (May 2024 – Oct 2025)

- Completed a 6-month AI Fellowship covering core ML concepts, deep learning, NLP, generative AI, computer vision, and MLOps.

PROJECTS

AgenticRAG ([Github . Documentation](#))

- Designed and implemented a modular, plug-and-play RAG library with layered architecture (Stores, Loaders/Connectors, Retrievers, Tasks, Orchestration).
- Developed an LLM-controlled agent to dynamically select data sources, retrievers, and tasks, enabling multi-step reasoning across text, tabular, relational DB, and web data.
- Created a schema-based tool interface for seamless extension and customization of components.
- Integrated LangChain for LLM connectivity while introducing custom orchestration, optimized prompts, and logging/monitoring for improved efficiency.

HolidayNepal ([Github Backend . Github Frontend](#))

- Final year project on AI powered trip planner with prompt-based itinerary generation and dynamic editing, backed by multi-step LLM workflows.
- Enabled real-time updates during plan creation using WebSocket streaming.
- Implemented secure auth with JWT, OTP email, and Google OAuth plus role-based access.
- Integrated PostgreSQL + pgvector for semantic search, Neo4j for route optimization, and containerized services with Docker Compose using Redis, Celery, and Localstack S3.

PDF Parsing Pipeline ([Github](#))

- Developed a robust pipeline to convert unstructured PDFs into structured Markdown, preserving headings, lists, complex tables and text formatting.
- Implemented a hybrid approach combining Doclign's structural accuracy and OCR power with PyMuPdf's text extraction accuracy.

Skills

- **Machine Learning/Deep Learning:** Classical ML, ANN, CNN, RNN, LSTM, Transformers.
- **Natural Language Processing:** Text Processing, Document Parsing, OCR, Embeddings, Semantic Search, Web Scraping
- **Generative AI & LLMs:** RAG, Agents, Langchain, Langgraph, LlamaIndex, SmolAgents
- **Core Backend:** FastAPI, Rest APIs, Websocket, Celery, Centrifugal, JWT/OAuth2
- **Languages & Libraries:** Python, JavaScript, Numpy, Pandas, Matplotlib, Sklearn, NLTK, Pytorch
- **Tools & Platforms:** Git, Github, Docker, Jupyter, Neo4j, PostgreSQL, Redis

Education

Bsc. CSIT (Apr 2022 – Current)

Tribhuvan University (Lumbini ICT Campus)

Relevance Coursework: Artificial Intelligence, Image processing, Statistics, Linear Algebra, Calculus, DSA, DBMS, SE etc.

ACHIEVEMENTS

University Topper : Achieved the highest percentage in BSc. CSIT for the 1st and 3rd semesters.