

DEV CHANDRA ADHIKARI

Agentic AI & Deep Learning Engineer

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PROFESSIONAL SUMMARY

Computer Engineering student (Thapathali Campus, IOE, Tribhuvan University) specializing in Agentic AI, Deep Learning, and NLP, with a track record of building and deploying production-grade AI systems end-to-end — from computer vision pipelines and recommendation engines to Retrieval-Augmented Generation (RAG) applications and MCP-based agentic workflows. Combines strong ML/DL fundamentals with full-stack engineering (Django, FastAPI, WebSockets) to ship AI products that go beyond notebooks into working, scalable software.

CORE SKILLS

Agentic AI & Generative AI: Autonomous & multi-step reasoning agents, LangGraph, Model Context Protocol (MCP), Retrieval-Augmented Generation (RAG), FAISS & ChromaDB vector search, open-source & API LLMs (Qwen, Hugging Face), prompt engineering & prompt-injection defense

Deep Learning & Computer Vision: PyTorch, TensorFlow, CNNs (ResNet, VGG, EfficientNet), transfer learning, embedding extraction, model deployment via REST APIs

Machine Learning & NLP: Scikit-learn, XGBoost, NLTK, spaCy, feature engineering, hyperparameter tuning, SHAP interpretability, recommendation systems, classification & clustering

Backend & Full-Stack: Django, Django REST Framework, FastAPI, WebSockets, JWT auth, Redis, PostgreSQL, REST API design, Windows/Linux deployment

FEATURED PROJECTS

Selected work below — [view all projects on GitHub →](#)

Vanguard — Autonomous Research & Monitoring Agent *Python • Agentic AI • LLM APIs • Scheduled Automation*

- **Built an autonomous, long-running AI agent** that researches custom topics, generates scheduled newsletters, and stays awake to continuously monitor and report on critical real-time events.
- **Designed for persistence and reliability**, combining scheduled task execution with live event monitoring in a single agentic loop.

Research Workflow — Multi-Step Agentic Report Generator *Python • LangGraph • Agentic Workflows • LLM APIs*

- **Built a multi-step research workflow with LangGraph** that takes any topic and autonomously produces a well-structured, citation-heavy research report.

CCPA Compliance RAG System

Python • RAG • Qwen2.5-1.5B • ChromaDB • FastAPI

- **Built a lightweight RAG system** that analyzes text scenarios for CCPA violations using the Qwen2.5-1.5B LLM combined with semantic search over ChromaDB.
- **Exposed compliance-checking functionality** through FastAPI endpoints for easy integration into other tools.

Transformer from Scratch — English-to-Hindi Translation *PyTorch • Transformers • NLP • Attention Mechanisms*

- **Implemented the “Attention Is All You Need” architecture from scratch** in PyTorch, without relying on pre-built transformer libraries.
- **Trained the model end-to-end** to translate English sentences into Hindi, validating a deep, ground-up understanding of self-attention and encoder-decoder design.

Stock Prediction using Transformers

PyTorch • Transformers • Time-Series Forecasting • yfinance

- **Built a custom Transformer encoder from scratch in PyTorch** for time-series stock forecasting, with feature embeddings, positional encoding, and multi-head attention blocks.
- **Trained and evaluated the model on historical data for 100 US companies** (with an Apple Inc. case study), using MSE, MAE, R-squared, and confusion-matrix analysis to assess prediction quality.

Real-Time Emotion Detector

PyTorch • Vision Transformer (ViT) • Computer Vision

- **Built a real-time facial emotion detection system** by fine-tuning a Vision Transformer (ViT) in PyTorch.

Chat with YouTube Videos (Yt Chat)

Python • LLM APIs • Web App

- **Built a web app that lets users paste a YouTube URL** and ask an LLM natural-language questions about the video's content.

EDUCATION

Bachelor of Engineering in Computer Engineering

Thapathali Campus, Institute of Engineering (IOE) — Tribhuvan University, Nepal

TECHNICAL STACK

Python • PyTorch • TensorFlow • Scikit-learn • Hugging Face Transformers • NLTK • spaCy • LangGraph • Model Context Protocol (MCP) • Agentic AI • RAG • FAISS • ChromaDB • LLM APIs (OpenAI, Qwen) • Prompt Engineering • Django • Django REST Framework • FastAPI • React • WebSockets • JWT • PostgreSQL • Redis • Git/GitHub • Windows • Linux