Gagan Thakur

Mandi, Himachal Pradesh
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Education

National Institute of Technology, Hamirpur **Aug. 2024 – Present**
Bachelor of Technology in Electronics and Communication Engineering

Swami Vivekanand Sr. Sec. School **Apr. 2010 – Apr. 2023**
High School *Mandi, India*

Technical Skills

Languages: Python, Rust, JavaScript, C++, C, Assembly
ML / DL Frameworks: TensorFlow, PyTorch, Keras, scikit-learn
Data Processing & Visualization: NumPy, pandas, OpenCV, Matplotlib, Seaborn
LLMs / Generative AI: Hugging Face Transformers, LangChain, LangGraph, OpenAI API
MLOps & Version Control: Git, GitHub, DVC, MLflow
Cloud Deployment & Tools: AWS, FastAPI, Docker, Streamlit, Google Colab, Jupyter
Soft Skills: Friendly, Communication

Work Experience

Author & Developer: Alphabets of Machine Learning **Apr. 2025 – Present**
Self-Driven Project *Remote*

- Created 26 curated ML projects covering supervised, unsupervised, and RL topics with explanations and complete code
- GitHub: github.com/seika-afk/Alphabets-of-Machine-Learning

Projects

NeuroBlock – Deep Learning Library from Scratch | *C++* | GitHub

- Developing a C++ deep learning library implementing ANNs and tensor operations from scratch without external ML frameworks
- Focused on modular layer APIs, backpropagation, serialization, and training loops for educational clarity

Conversational Chatbots (3 Approaches) | *Python, TensorFlow, PyTorch, LangChain* | GitHub

- Built chatbots using RNN Encoder-Decoder, Transformers from scratch, and GenAI with LangChain + OpenAI + vector search

Vehicle Insurance Prediction – MLOps Project | *DVC, MLflow, FastAPI, Docker* | GitHub

- Implemented end-to-end MLOps pipeline: data versioning (DVC), experiment tracking (MLflow), CI/CD, and containerized deployment

Action Recognition from Video | *Python, Keras, NumPy* | GitHub

- Trained a 3D CNN to classify human actions from video sequences with preprocessing and evaluation pipelines

Flappy Bird AI using NEAT | *Python, NEAT-Python, Pygame* | GitHub

- Evolved neural networks using NEAT to master Flappy Bird gameplay with training snapshots and visualization

Achievements

Contributed to major open-source organizations including Supabase, Fossology, and SunPy
Completed LeetCode 150 series twice for Data Structures and Algorithms

Interests

Music Production, Digital Art & Creative Design, Technical Project Development, Algorithmic Problem Solving