

# Ankush Patil

Machine Learning • Deep Learning • NLP • LLM Finetuning

Machine Learning Engineer specializing in NLP, deep learning, and LLM finetuning with hands-on experience building RAG systems, custom Transformers, and production-ready ML pipelines.

📍 India | Machine Learning Engineer

ankpatil1203@gmail.com | linkedin.com/in/ankush-patil-48989739a | github.com/Ankush-Patil99 | +91 9822308926

## SKILLS

**Languages:** Python (Pandas, NumPy, Scikit-Learn, TensorFlow, Torchvision, PyTorch, OpenCV), C++, SQL

**Technical:** ML, Deep Learning, Generative AI, NLP, Computer Vision, Statistics

## EDUCATION

Year	Degree / Board	Institute	GPA / Marks
2021	B.E. Civil Engineering	K.K. Wagh I.E.E.R., Nashik	CGPA: 7.88
2017	HSC (Science)	K.T.H.M College, Nashik	73%
2015	SSC	New Era English School	84%

## EXPERIENCE

### SITE ENGINEER

FEB 2023 – NOV 2025

*Charwak Engineers & Developers, Nashik (Onsite)*

- Supervised onsite construction activities ensuring adherence to approved drawings, specifications, and safety standards.
- Developed strong understanding of construction workflows, execution methods, and technical documentation.

### PROJECTS

#### WIKIPEDIA RAG + LLAMA FINETUNING [CODE]

LLM | SEP – OCT 2025

*Tech: PyTorch, LLaMA, LoRA, RAG, FAISS, SentenceTransformers*

- Built a complete RAG pipeline with optimized chunking + embeddings; fine-tuned LLaMA using LoRA for factual QA improvements. Demonstrated measurable improvements in answer coherence (ROUGE-1: 0.033, ROUGE-L: 0.024) with strong training loss reduction during LLaMA fine-tuning.

#### TRANSFORMER ENGLISH→HINDI (FROM SCRATCH) [CODE]

NLP | AUG – SEP 2025

*Tech: PyTorch, Custom Attention, Positional Encoding, Masking, Beam Search*

- Built a full Transformer Encoder–Decoder from scratch in PyTorch with custom attention, masking, and beam search. Achieved BLEU 49.76 on English→Hindi translation and deployed the model on HuggingFace for reproducible inference.

#### AMAZON REVIEWS NLP [CODE]

NLP | JUL – AUG 2025

*Tech: BART, TF-IDF, Sentiment, Aspect Mining, Topic Modeling, BART/T5*

- Developed a scalable NLP pipeline for 3M+ Amazon reviews including sentiment analysis, aspect extraction, and transformer-based summarization.

#### PLANT DISEASE DETECTION [CODE]

CV | APR – JUN 2025

*Tech: PyTorch, ResNet18, Transfer Learning, OneCycleLR, Grad-CAM*

- Built a ResNet18 transfer-learning pipeline with Grad-CAM explainability; achieved high accuracy across 38 disease classes.

#### CREDIT CARD FRAUD DETECTION [CODE]

ML | FEB – MAR 2025

*Tech: PCA, UMAP, KMeans, GMM, DBSCAN, Isolation Forest, LOF*

- Built a hybrid anomaly-detection workflow; Isolation Forest delivered the best precision–recall performance.

#### SPAM SMS CLASSIFIER [CODE]

NLP | FEB – MAR 2025

*Tech: TF-IDF, Logistic Regression, Naive Bayes, GDA*

- Built a TF-IDF + Naive Bayes/Logistic Regression system identifying high-impact spam tokens with strong recall.

#### STUDENT PERFORMANCE PREDICTION [CODE]

ML | JAN – FEB 2025

*Tech: PCA, SVM, Gradient Boosting, Stacking*

- Created a stacked regression model achieving 0.90 R<sup>2</sup> for academic score prediction.

#### IMPLEMENTATIONS FROM SCRATCH [CODE]

ML + DL | AUG

2024 – JUL 2025

*Tech: NumPy, PyTorch, Custom Models, Tokenizers, Embeddings*

- ML:** Linear/Logistic Regression, Gradient Descent, Naive Bayes, Oblique Trees, GMM, L1-SVM, PCA, Bagging, XG-Boost.

- DL:** Neural Networks, BPE, Word2Vec, CNNs, RNNs, LSTMs, VAEs.