

# Jaspreet Singh Nahal

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[LinkedIn](#) | [GitHub](#) | [Portfolio](#)

## SUMMARY

B.Tech CSE (AI) student with ML internship experience and **300+ LeetCode problems**. Built AI chatbots, trading systems, and automation tools using Python, React, FastAPI, and LangChain with focus on scalable architecture and performance optimization.

## EXPERIENCE

### Machine Learning Intern

Aug 2025 – Oct 2025

*Expedien eSolutions*

*Noida, India*

- Built RAG-based legal chatbot using LangChain, FAISS, and Hugging Face models with RetrievalQA pipeline
- Optimized document retrieval achieving <2s response time on 10K+ document corpus with Streamlit UI

### Algorithmic Trading Developer

Nov 2024 – Dec 2024

*Freelance*

*Remote*

- Developed automated trading system with SMA crossover strategy using Flask API and PostgreSQL
- Reduced trade execution latency by 30% through async processing and optimized data handling

## PROJECTS

### Context-Grounded GPT-RAG System | *GPT, PyTorch, Transformers, FAISS, NLP, RAG*

February 2026

- Built and pretrained a 200M-parameter GPT-style transformer from scratch in PyTorch with causal self-attention, custom initialization, and GPT-2 tokenization on 10B FineWeb-Edu and Wikipedia tokens and Wikipedia data.
- Implemented Retrieval-Augmented Generation using Sentence Transformers and FAISS, achieving sub-200ms retrieval latency and reduced hallucinations via confidence-based gating.
- Developed a hybrid GPT/RAG chat system with instruction fine-tuning, selective loss masking, top-k sampling, and repetition control for reliable multi-turn conversations.

### Resume Skill Extractor | *Python, FastAPI, NLP, React*

Jun 2025

- Engineered AI-powered skill extraction tool using spaCy, TF-IDF, and regex achieving 85%+ accuracy
- Built REST API processing resume files in <2s with containerized deployment via GitHub Actions

### AI Chatbot with NER | *React.js, Python, Flask, MongoDB*

Sep 2024

- Developed NLP chatbot with 92% intent recognition accuracy handling 1,000+ user sessions
- Integrated Named Entity Recognition and real-time Flask API with <1s response time

## EDUCATION

### Dr. A.P.J. Abdul Kalam Technical University

Uttar Pradesh

*B.Tech Computer Science Engineering*

*2023 – 2027*

## TECHNICAL SKILLS

**Languages:** Python, Java, C++, JavaScript

**ML & LLM Systems:** PyTorch, Hugging Face Transformers, SentenceTransformers, FAISS, LangChain, Retrieval-Augmented Generation (RAG)

**Data & Training:** NumPy, Pandas, scikit-learn, Spark, gradient-based optimization, large-scale pretraining

**Backend & Tooling:** FastAPI, Flask, REST APIs, PostgreSQL, MongoDB, Git, Docker, GitHub Actions, Streamlit

## HACKATHONS & CERTIFICATIONS

**Hackathons:** IBM AI Hackathon (2025), Google Solutions Challenge (2025), GUVI Hackathon (2025)

**Certifications:** Google – Prompt Design in Vertex AI & Responsible AI, IBM – Accelerating Deep Learning with GPUs, BCG X (Forage) – GenAI Financial Chatbot Simulation