

NIRBHAY PRATAP SINGH

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PROFILE

Machine Learning, AI, and NLP specialist with experience in designing, training, and deploying models using TensorFlow, PyTorch, and Hugging Face. Skilled in NLP workflows, including transformers, embeddings, and vector databases. Proficient in end-to-end deployment with Linux, Docker, and SSH. Experienced in developing machine learning models and optimizing performance. Expertise in Python, EDA, feature engineering, and API integration for data-driven insights, eager to contribute to advanced AI/ML projects.

EDUCATION

Babu Banarasi Das University Lucknow - B.Tech(CSE-AI) • CGPA: 7.32 2021 - 2025

Army Public School SP Marg Lucknow

- Class 12th: 82.8% (2021)
- Class 10th: 90% (2019)

EXPERIENCE

AI Software Trainee at TechFresh pvt ltd

February 2025 - Present

- Developed Generative AI and RAG-based applications using Gemini, LLMs, and vector databases.
- Automated data scraping with Selenium, Playwright, Scrapy, and AI-based parsing.
- Integrated LLM APIs, LangChain, and Hugging Face for intelligent applications.
- Designed prompt engineering strategies to optimize AI model responses.
- Built data pipelines for seamless ingestion, transformation, and storage.
- Fine-tuned LLMs for domain-specific AI solutions.

Machine Learning Intern at DevSkillHub

August 2024 - October 2024

- Developed, trained, and deployed supervised & unsupervised AI models for real-world applications.
- Conducted comprehensive EDA to extract insights and improve model performance.
- Applied classification (Logistic Regression, Random Forest) and clustering techniques for AI-driven solutions.
- Utilized PyTorch, TensorFlow, LangChain, and Hugging Face for model development and fine-tuning.
- Optimized AI workflows using vector databases, LLM APIs, and prompt engineering.

PROJECTS

Real Estate LLM Chatbot using LLaMA

- Scraped and processed web data to build custom AI datasets for training and fine-tuning models.
- Developed domain-specific conversational AI using Hugging Face's LLaMA, Transformers, and LangChain.
- Engineered and optimized LLMs with prompt engineering, vector databases, and retrieval-augmented generation (RAG).
- Built and deployed AI models using PyTorch, TensorFlow, Keras, and Hugging Face APIs.
- Managed and scaled applications with Docker, Kubernetes, and REST API deployment on AWS/GCP.
- Integrated real-time streaming solutions using Kafka for efficient data processing.
- Applied NLP, entity recognition, and deep learning techniques for model improvement.
- Optimized model performance and inference speed for high scalability and accuracy.

Hate Speech Recognition on Twitter

- Developed an NLP model to detect hate speech and offensive content in tweets.
- Preprocessed text using tokenization, stopword removal, lemmatization, and TF-IDF embeddings.
- Applied classification algorithms (Logistic Regression, Random Forest, BERT) for accurate predictions.
- Fine-tuned transformer models (BERT, RoBERTa) for improved sentiment classification.
- Evaluated model performance using precision, recall, F1-score, and confusion matrices.
- Deployed the model with Streamlit for an interactive and user-friendly interface.

SKILLS

- Programming: Python, Java, JavaScript
- Machine Learning & NLP: Transformer Models (BERT, RoBERTa, GPT, LLaMA), RAG-based Applications, Named Entity Recognition (NER), Text Classification, Sentiment Analysis, Fine-Tuning LLMs
- Generative AI: LLM APIs (Gemini, OpenAI, LLaMA), Prompt Engineering, Vector Databases, LangChain, Retrieval-Augmented Generation (RAG)
- Frameworks & Tools: PyTorch, TensorFlow, Keras, Hugging Face Transformers, Streamlit, Chainlit
- Data Science & Analytics: Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, EDA, Feature Engineering
- Web Scraping & Automation: Selenium, Playwright, Scrapy, BeautifulSoup
- Cloud & Deployment: Docker, Kubernetes, AWS/GCP, REST API, Flask, FastAPI, Real-Time Streaming with Kafka
- AI Model Optimization: Quantization, Distillation, Model Compression, Scalability Enhancements

CERTIFICATES

- Master In Artificial Intelligence (AI)- Udemy
- Neural Networks and Deep Learning - DeepLearning.AI
- Machine Learning with Python – Ikgai

PROFILES

- Leetcode: leetcode.com/u/nirbhaysingh_mg/
- LinkedIn: <https://www.linkedin.com/in/nirbhaysinghmg/>
- GFG: <https://www.geeksforgeeks.org/user/nirbhays2k4c/>