Priyanshi Lohani

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Education

Banasthali Vidyapith, Jaipur *Aug. 2022 – May 2026*

B.Tech in Computer Science and Artificial Intelligence CGPA: 8.15

Relevant Electives and Study Projects

Artificial Intelligence, Machine Learning, Web Development, Deep-Learning, Natural Language Processing, Image Processing, Computer Vision, Data Mining, Design and Analysis of Algorithms, DBMS, Data Structures

Technical Proficiency

- **Languages**: C/C++, Java, Python, Next.js, SQL, HTML, CSS, JavaScript, PHP
- **Frameworks**: React, Node.js, LangChain, TensorFlow
- **Developer Tools**: Linux, MATLAB, Git, WordPress, Hugging Face Models, Sentence Transformers, Docker

Projects and Research Work

Fire and Smoke Detection System | *Python, OpenCV, TensorFlow, MobileNetV2, Matpoltlib*

- **Published Research Paper** : "Forest Fire Detection And Monitoring Using Image Processing And Computer Vision", *International Journal of Multidisciplinary Educational Research (IJMER)* **Link**
- Developed a fire and smoke detection system using **image processing**, **computer vision** and **deep learning**.
- Implemented fire segmentation using HSV and YCbCr color spaces.
- Motion detection through frame differencing, optical flow, and background subtraction.
- Estimated the fire-affected area using contour detection and pixel-based measurements, and visualized results with overlays for real-time analysis
- Used edge detection, Local Binary Patterns, and a fine-tuned **MobileNetV2** model for smoke detection.

DocAssist | *Next.js, Flask, Python, MongoDB, JWT, NLP*

- Developed a website using **Next.js** with user authentication using **JWT tokens** and **MongoDB**.
- Integrated various features:
  - **Document Chatbot**: AI-powered chatbot that processes PDF files and answers queries based on document content. Uses **LangChain** and **PyPDF2** to extract text, convert it into vectors, and store in **FAISS**. Employs **Hugging Face** models and **Pinecone** for query understanding and content-based responses.
  - **AI Text Editor**: Intelligent text editor that summarizes documents and provides context-aware suggestions. Utilizes **Sentence Transformers (MiniLM)** for semantic similarity and **BART** for text summarization. Uses **Cosine Similarity** to identify and summarize relevant document chunks.
  - OCR: Extracts text from images using **Pytesseract** and **Pillow**.
  - Paraphraser: Rewrites text using **Transformers** and **LanguageTool Python**.
  - Research Paper Template: Converts randomly formatted text into structured IEEE research paper in PDF format using **NLTK** for **natural language processing**. Implements intelligent section detection (e.g., Abstract, Introduction, Methodology) and reorders content according to IEEE guidelines. Integrated **pdflatex** to dynamically convert **LaTeX** templates to IEEE-formatted PDFs.
- Integrated all Python-based functionality with the frontend using **Flask** and error handling, and cross-origin support via **Flask-CORS**.

AI-Based Weather Forecasting System | *Python, TensorFlow, Machine Learning, Seaborn*

- Built a machine learning model to forecast weather conditions (temperature, humidity, rainfall) using historical meteorological data.
- Preprocessed large datasets using **Pandas** and **NumPy**, and engineered features for model input.
- Implemented and compared multiple regression models **(Linear Regression, Random Forest, LSTM)** for prediction accuracy.
- Visualized predictions vs. actual data using **Matplotlib** and **Seaborn** for interpretability.
- Achieved high accuracy and robustness by fine-tuning hyperparameters and applying cross-validation techniques.

Programmes

Flipkart Girls Wanna Code

Covered the Modules by Flipkart's Mentors : Data Structure and Algorithms, Greedy Algoritm, Dynamic Programming.