Aditya Raj

Bachelor of Technology
Electronic and communication engineering
National Institute of Technology, Patna

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Linkedin Profile
Github Profile

Education

- **National Institute of Technology, Patna** 2023-27
  B.Tech in Electronics and Communication Engineering CGPA: 8.33

Projects

- **Movie Review Classifier: Sentiment Analysis using ML/DL** *Present*
  Tools: Python, Scikit-Learn, TensorFlow, NLP, Logistic Regression, Random Forest, Neural Networks [GitHub]
  - Developed a sentiment analysis system to classify movie reviews as positive or negative.
  - Equipped multiple models (Linear SVC, Random Forest, Logistic Regression, Neural Network) for comparison.
  - Preprocessed text data using NLP techniques and vectorization methods.
  - Evaluated models based on accuracy and precision, achieving an accuracy of 88.05% with neural networks.
  - Saved trained models for future use and streamlined evaluation with visualizations.

- **AI Chatbot with Gemini API: Intelligent AI Assistant** *March 2025*
  Tools: Python, Tkinter, Gemini API, FPDF, Requests, JSON [GitHub]
  - Designed an AI chatbot using Gemini API to provide intelligent responses based on user input.
  - Integrated a Tkinter-based GUI with a two-panel layout for user interaction and AI-generated responses.
  - Added customizable bot presets with an option for users to define their own AI personas.
  - Created a notes-saving feature allowing users to store and export interactions as a PDF.
  - Applied API-driven NLP techniques to enhance contextual understanding and chatbot accuracy.

- **Face Mask Detection: Deep Learning-based Mask Classification System** *Present*
  Tools: Python, TensorFlow/Keras, OpenCV, NumPy, Matplotlib, Scikit-Learn [GitHub]
  - Generated a DL model using a custom CNN to detect whether a person is wearing a mask.
  - Implemented data augmentation techniques to improve model generalization and accuracy.
  - Optimized the model using batch normalization, dropout regularization, and learning rate scheduling.
  - Determined the model using accuracy (90%+), precision, recall, and F1-score metrics.

Skills and Interest

- **Programming Languages**: C/C++, Python, JavaScript, SQL
- **Technologies**: Machine Learning, Deep Learning, NLP, Data Preprocessing, Model Evaluation
- **Frameworks**: Numpy, Pandas, Matplotlib, TensorFlow, Scikit-Learn, Keras, Seaborn, Tkinter
- **Tools**: Visual Studio Code, Jupyter Notebook, Git, Docker
- **Libraries**: Hugging Face, LLaMA, Gemini API, FastAPI, Flask
- **Interests**: Competitive Programming, AI/ML, Data Structures & Algorithms

Certifications

- **Kaggle, Python Certification**, View Certificate *March 2025*
- **Stanford University, Supervised Learning**, View Certificate *March 2025*
- **Building LLM Powered Apps, Udemy**, Certificate of Completion *April 2025*

Achievements

- Attended DevFest 2023 by Google Developer Group, exploring cloud computing and AI innovations.
- Ranked in the top 450 out of 20000+ applicants in ATF 2024, reaching the final interview round.
- Achieved a CodeChef rating of 1430+ with 250+ problems solved in contests with 2 star.
- 5-Star Badge @Hackerrank in Python