RAJ PATIL

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Education

Indian Institute of Technology, Patna   **November 2022 – May 2026**
Bachelor of Technology in Artificial Intelligence and Data Science   *CPI: 7.39*

St. Joseph's Convent Sr. Sec. School, Jalgaon   **April 2021 – May 2022**
Central Board of Secondary Education - XII   *Percentage: 92.6%*

St. Joseph's Convent Sr. Sec. School, Jalgaon   **April 2019 – May 2020**
Central Board of Secondary Education - X   *Percentage: 97.2%*

Projects

- **<u>Hate Detection</u>** | *Python, Tensorflow, Pytorch, Sentence-transformers*   *August 2024*
  - Developed a **multi-classification** model to categorize tweets into 5 hatred types, enhancing platform safety.
  - Trained an **11-layered** neural network on 1,50,000+ data points and extracted sentence embedding by utilizing **sentence-transformers/all-mpnet-base-v2**.
  - Attained an accuracy of **98.95%** and a precision of **75%**, demonstrating high effectiveness in classifying tweets.
  - Performed thorough **data preprocessing**, balancing class distribution, and cleaning over **150,000+** data points, which improved model accuracy and robustness during training.

- **<u>Celebrity Look Alike</u>** | *Python, Streamlit, OpenCV, TensorFlow, Keras, Numpy*   *June 2024*
  - The project leveraged **advanced deep learning** to match user-uploaded photos with celebrities by performing face detection and achieved a **92%** performance score.
  - Executed **OpenCV & CNN VGG-Face** to process 8,000+ images efficiently, applied **TensorFlow & Keras** for feature extraction of pre-trained model, and utilized Python modules for **exploratory data analysis**.
  - Engineered a **Streamlit**-based web interface for enhancing user interaction, reducing data processing time.

- **<u>Car Price Prediction</u>** | *Python, Django, HTML, CSS, Numpy, Scikit-Learn, Matplotlib*   *April 2024*
  - Developed a **machine learning** model to predict car prices, trained on a robust dataset of 6000+ data points.
  - Implemented **linear regression** initially, yielding an R^2 score of **70%**. Further optimized the model with a **random forest regressor**, achieving an R^2 score of **93%**, boosting model efficiency by **23%**.
  - Engineered a **Django** deployed website (**HTML** & **CSS**), ensuring scalable user interaction and real-time predictions, and utilized Python libraries like **Numpy, Pandas & Matplotlib** for data analysis and visualization.

Accomplishments

- Rated **1319 (Pupil)** on <u>Codeforces</u> and **1660 (3-Star)** on <u>CodeChef</u>.
- Achieved a **global rank** of **67**, outperforming **3,000+** candidates in the CodeChef Starters 142 Div 4 contest, placing in the top **2.3%** globally.
- Secured **AIR 5471** in JEE Mains & **AIR 6451** in JEE Advanced, ranked in the top **0.6%** candidates.

Skills / Relevant coursework

- **Technical Skills:** C, C++, Java, Python, JavaScript, Pandas, NumPy, TensorFlow, PyTorch, LLM, VS Code, Jupyter Notebooks, Git, Docker, Kubernetes, OpenShift, AWS, Azure

- **Interests:** Competitive Programming, Machine Learning, Software Development.

- **Courses:** Artificial Intelligence, Machine Learning and Data Science, Deep Learning, Linear Algebra, Probability, Statistics, Operating Systems, Computer Networks, DSA, DBMS.

Experience/Extracurricular

Sub-Coordinator at Anwesha (Cultural Fest, IIT Patna)   **August 2023 – December 2023**
Served as a Sub-Coordinator at Anwesha TV Video Editing Club, IIT Patna, where I managed video editing projects, led training sessions for 20+ new members, and collaborated in producing over 10 high-quality videos for the Annual Cultural Fest, significantly boosting event engagement.