ANIRBAN BANERJEE

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Education

National Institute of Technology, Rourkela   **Aug. 2023 – Present**
Bachelor of Technology in Ceramic Engineering(CGPA - 8.03)   *Rourkela, Odisha*
Minor Degree in Computer Science and Engineering (CGPA - 6.87)

Ramakrishna Mission Vidyalaya,Narendrapur   **May 2022**
WBCHSE, (Percentage - 91.2%)   *Kolkata, WestBengal*

Ramakrishna Mission Vidyalaya,Narendrapur   **June 2020**
WBSE, (Percentage - 94.57%)   *Kolkata, WestBengal*

Relevant Coursework

- Data Structures
- Discrete Structures
- Object Oriented Programming
- Machine Learning
- Deep Learning

Projects/Experience

Text Recognition from early modern Spanish Documnets   **April 2025**
OpenCV, Pytesseract, Vision Transformer model, finetuning   *GitHub*
- Early modern documents and scripts are often full of noise, hence traditional OCR methods like adobe OCR cannot detect text makes error while extracting text from them.
- This transformer based model is capable of extracting text from the documents by performing text detection at first, then recognizing them and incorporating the changes in languages that differ from today's spanish language
- The model has achieved a CER (Character Error Rate): 0.2427 and Character-Level F1-score:84%. I am also working on making a user-friendly app for hosting the model. I have provided a prototype of a streamlit app on the github codebase.

Text Segmentation for Indian Languages   **April 2025**
Natural Language Processing,Graph clustering Algorithms, Streamlit   *GitHub*
- Created an application which segment text written in Indian languages like Bengali or Hindi according to meaning and context. This uses transformers to generate embedding from the given text sentences and graph clustering algorithm do not allow sentences that are close in meaning to be segmented.
- This segmentation model can be used in translation, summarization and other NLP tasks of texts in Indian Languages making them faster and easier
- Created and deployed a user-friendly Streamlit app to host the model, enabling real-time text segmentations. Currently it works for hindi and bengali and in multiple document formats.

Face Emotion Detection App   **December 2024**
Python, CNN, Jupyter, Streamlit   *GitHub*
- The Application is capable of detecting emotions from facial images, leveraging advanced image processing and machine learning techniques.
- Implemented Convolutional Neural Networks (CNN) and applied transfer learning using the VGG16 architecture, achieving 65% accuracy on the validation dataset.
- Developed a Streamlit app to host the machine learning model, enabling real-time predictions while displaying additional possible emotions detected by the model.

Technical Skills

- **Languages**: Python, C++
- **Developer Tools**: VS Code
- **Technologies/Frameworks**: GitHub, Scikit learn, Tensorflow, Pytorch, Streamlit,
- **Specialization**: Machine Learning, Deep Learning, Natural Language Processing

Leadership / Extracurricular

National Sevice Scheme   **August 2023 – November 2023**
member   *NIT Rourkela*
- Active member of the National Service Scheme (NSS), organized programs to promote cleanliness awareness and led campaigns against plastic pollution to protect the environment.

Debator and Orator   **2018-2021**
member   *Ramakrishna Mission Vidyalaya, Narendrapur*
- Actively participated in debates,elocution,and public speaking activities at school. Represented our school in All India Elocution Competition held in Golpark,Kolkata