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B.Tech.
Gender: Male
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Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2026	9.22
Intermediate	MP Board	Patidar H.S. School	2021	95.00%
Matriculation	CBSE	Eminent Public School	2019	93.60%

Pursuing a Minor Degree in **Artificial Intelligence and Data Science** from CMInDS, IIT Bombay

Scholastic Achievements

- Among the top **3.5 percent** in **JEE Advanced 2022** exam out of **0.16 M** candidates all over India('22)
- Secured **98.73 percentile** in **JEE Mains 2022** out of **1.1 M** eligible candidates from all over India ('22)

WORK EXPERIENCE

GenAI intern | Rentprompts [Dec'24-Present]

- Developed an **Agent**, using **LangChain**, capable of performing multiple tool calls to answer user query
- **Integrated decomposer RAG** to break down complex queries into sub-queries, retrieve the most relevant chunks, and utilize LLMs for delivering accurate and context-aware answers
- **Built versatile tools** to extract and process information from diverse sources such as websites, APIs, links, with added support to execute Java, Python, and C++ code, and analyze .csv and .pptx files

ML Engineer Intern | CurosaI [May' 24- July'24]

- Developed a pipeline to replace target words in Hindi video audio using **WhisperX** for timestamp extraction of the target word and voice cloning to match speaker tone seamlessly
- Integrated **LIPGAN** to generate precise lip-sync frames, ensuring accurate video-audio alignment
- Executed end-to-end processing, including **audio replacement** and **video frame adjustments**

KEY PROJECTS

KRIYETA 3.0 | National Level Hackathon [June'24]

Acropolis Institute, Indore

- Implemented a chatbot utilizing **Retrieval-Augmented Generation (RAG)** techniques with LangChain, delivering tailored and context-aware responses based on user inputs to enhance user engagement
- Fine-tuned **DistilBERT Large Language Model (LLM)** with **LoRA (Low Rank Adaptation)** for sentiment analysis task, predicting mental health states from user's text inputs with **95%** accuracy
- Developed a dynamic and interactive frontend with **React**, integrated with a seamless backend using **Flask**, delivering a reliable web application with optimal performance and better user experience

Hate Speech detection | Self Project [Nov 2023]

- Implemented the **Enhanced Seagull Optimization Algorithm** with NLP for hate speech detection and classification on social media, including data pre-processing and feature extraction using **Glove technique**
- Implemented **Attention-Based Bidirectional LSTM (ABLSTM)** for classifying social media text into neutral, offensive, and hate language, optimized with the ESGO algorithm for superior performance
- Achieved superior performance in this task with an accuracy of **99.24%** on the **Stormfront dataset**

Facial Emotion Detection | Seasons of Code [May'24 - July'24]

Web & Coding Club | ITC | IIT Bombay

- Implemented and trained **ResNet-18** model on CK+ dataset using PyTorch for facial expression recognition
- Optimized model training with techniques like **SGD** with momentum, **dynamic learning rate scheduling** & **gradient clipping** to ensure stable convergence & mitigate exploding gradients
- Evaluated the model performance through rigorous testing, achieving **81.22 %** accuracy on test dataset

Image Classification with DenseNet | Course Project [Feb'24 - March'24]

Machine Learning for Remote Sensing - II (GNR - 638) | Prof. Biplab Banerjee

- Analyzed a bird image dataset with over **200** classes, implemented a custom **CUB class** for efficient dataset management, and applied **transformations** to augment the dataset, enhancing model performance
- Utilized **DenseNet-169** with a custom classifier, **batch normalization** and applied **cross-entropy loss**
- Trained the model with **AdamW** optimizer and **cosine annealing scheduler**, achieving accuracy of **72.33%**

Image Enhancement with Autoencoder | Course Project

[March'24 - April'24]

Machine Learning for Remote Sensing - II (GNR - 638) | Prof. Biplab Banerjee

- Conducted image analysis by identifying **MIME** types, resizing **24K** sharp PNG images to **448x256** dimensions and applied 3 **Gaussian** filters to generate **72K** blurred images for model training
- Implemented a **convolutional autoencoder** in TensorFlow/Keras for image restoration and enhancement
- Trained the **autoencoder** on 24,000 pairs of **sharp** and **blurred** images with a validation loss **0.0110**
- Developed and executed an evaluation script to preprocess images, predict **deblurred** images with the trained autoencoder, and achieved an average **Peak Signal-to-Noise Ratio (PSNR)** of **31.24** Decibels

Other Projects

Autonomous Wheeled Bot | Course project

[March'23 - May'23]

Makerspace(MS101) | Prof. Ankit Jain

- Developed an **autonomous** line-follower bot that could climb inclines upto **30 deg** with a payload of **300 gm**
- Incorporated 2 **IR Sensors** with and **Arduino UNO** microprocessor, enabling it to track and detect lines
- Optimized design for operational efficiency, lowering **COM** to avoid toppling through positioning of payload

Seamless Travel for Disabled People | Course Project

[Jan'24 - April'24]

Design Thinking and Innovation (DE 250) | Prof. Nishant Sharma

- Conducted thorough user research through interviewsand observations,identifying key needs and pain points
- Led **ideation** & **prototyping** using **SCAMPER** , testing & iterating prototypes based on peer feedback
- Developed prototypes,creating **mockups,wireframes** & **CAD** models to iterate based on evaluations

Handwritten Digit Recognition | Self Project

[June'24]

- Developed a Handwritten Digit Recognition system using the **MNIST dataset** and Neural Networks
- Implemented a 3-layered **Neural Network** architecture including an input layer for **feature distribution** a hidden layer with nonlinear activations for pattern recognition, and an output layer for final predictions.
- Employed multilayer neuron activations to recognize **complex** patterns and relationships in digit images.

Position of Responsibility

Marketing Co-ordinator | The Entrepreneurship Cell, IIT Bombay

[May'23 - Feb'24]

Asia's Largest Entrepreneurship promoting student body | Recognized by **NEN** | Patronage from **UNESCO**

- Approached over 5000 marketing executives from more than 100 companies to secure sponsorships for Eureka!, Asia's largest student-run business model competition, which attracted over 15,000 registrations.
- Ideated and executed **10+** publicity campaigns to increase the registration for **Eureka!** by more than**25+%**.
- Explored strategic associations with corporates in various sectors like Healthcare, FMCG, and Fintech.
- Reached out to **1000+** professionals over **LinkedIn** and secured the partnership of multiple firms.

Technical Skills

Programming	Python, C++ , SQL, DSA ,Git, Github
Softwares	Microsoft Office,Microsoft Excel, Fusion 360, Laser CAD, Arduino, L ^A T _E X
Libraries	NumPy, Pandas, Keras, Scikit-learn, Pytorch , Matplotlib, Tensorflow, Seaborn, Scipy

Relevant Courses Undertaken

- **Maths & Programming** Linear Algebra, Introduction to Machine Learning, Machine Learning for Remote Sensing - II, Differential Equations, Computer Programming and Utilization, Calculus I, Calculus II, NLP, Deep Learning

Extracurriculars

Sports	<ul style="list-style-type: none"> • Completed yearlong Badminton training in NSO fostering discipline & game spirit. ('22) • Competed in state-level badminton tournament which had 100+ participants. ('15)
Social	<ul style="list-style-type: none"> • Participated in IIT Bombay's Versova Beach Cleanup and Awareness Campaign ('24)