Pursuing Minor in **Machine Intelligence and Data Science**

SCHOLASTIC ACHIEVEMENTS

- Consolidated a **top 5% rank** in **IIT JEE Advanced** examination among **0.16 million** candidates *(2022)*
- Attained a percentage of **96.20** in **BSER** Rajasthan Board examination *(2021)*

KEY PROJECTS

ReinFLY: AI Learns to Play Flappy Bird *(Jun'24-Present)*
Summer Project: Seasons of Code | Web and Coding Club, IIT Bombay
- Created a fully functional Flappy Bird game from scratch using **Pygame** library to understand game mechanics
- Implemented a **Deep Q-Network** model to train an AI agent to play Flappy Bird autonomously and more efficiently
- Utilized **reinforcement learning** techniques to **optimize** the agent's performance and improve game play strategies
- Fine-tuned hyper parameters to improve the agent's learning process, achieving significantly higher scores and stability

Computer Vision *(Jun'24-Present)*
Summer Project: Summer of Science | Institute Technical Council, IIT Bombay
- Gained expertise in implementing and troubleshooting **deep learning** models, focusing on practical applications
- Learned advanced architectures: **VGG16, RCNN, Faster RCNN, Mask RCNN, UNet, R2Attention UNet**
- Implemented VGG16 for **image classification** and Mask R-CNN for **object detection**, achieving improvements
- Developed and deployed **UNet** and **R2Attention UNet** for **image segmentation**, achieving accuracy enhancements.

T20 Score Prediction *(Dec'23-Jan'24)*
Winter Project: Winter in Data Science | Analytics Club, IIT Bombay
- Performed extensive **EDA** Analysis and feature engineering on T20 Match datasets to enhance predictive accuracy
- Preprocessed data using **ColumnTransformer** and **Pipeline**, incorporating **one-hot encoding** and **scaling**
- Implemented and evaluated **Linear Regressor, Random Forest, KNN, Decision Tree, and XGBoost models**
- Achieved **88.74%** accuracy with **RF**, selecting the best model, and deployed the predictive model using **Streamlit**.

Emotion Detection Using Deep Learning | Self Project *(Dec'23-Jan'24)*
- Utilized a dataset of about **35,000+** images from **Kaggle's fer2013** for the training and testing of this detector
- The input data was **augmented** using **Tensorflow** and **Keras** functions and then fed directly to the Model
- The training model had **Convolutional Neural Networks** (CNN) followed by batch Normalization and **Max pooling**

POSITIONS OF RESPONSIBILITY

Web Activity Associate | NSS, IIT Bombay *(Jun'23 - Apr'24)*
Part of a team of 4 people responsible for maintaining and updating the websites of NSS, IIT Bombay
- Contributed to the previous **webpages** of NSS, making changes and updating the existing codebase on **PHP**
- Collaboratively developed a **digital attendance** portal on the NSS website for AA to take attandense of volunteers
- Collaborated with the team develop the new **NSS website**, including the Home page and department pages
- Contributed to the creation and ground implementation of the **website** for **Flair, the Annual event of NSS**

TECHNICAL SKILLS

Programming	**C++**, **Python**, HTML, CSS, JavaScript, SQL
Data Science	**Tensorflow, Keras, Pytorch**, Numpy, Pandas, Matplotlib, Seaborn
Tools	LaTeX, Git, GitHub, Figma, Excel, Office Suite

KEY COURSES UNDERTAKEN

Mathematics: Calculus, Linear Algebra, Differential Equations

ML and Computer Science: Computer Programming and Utilization, AI and Data Science, Introduction to Machine Learning, Supervised Machine Learning, Advanced Learning Algorithms

EXTRA-CURRICULAR ACTIVITIES

- Volunteered as substitute teacher for 50+ students at Dhruva VRIKSH, preparing for JEE *(Aug '22 - Nov '22)*
- Participated in Muskaan and Neem School initiatives, instilling values in children aged 3-10 *(Feb'24 - July'24)*
- Achieved honorable mention in Innovate-a-thon '24 by Blix for outstanding innovative solutions *(2024)*
- Represented Hostel 6 in Crossy GC, completing a 5.5 km marathon across campus *(2024)*