Pursuing a **Minor** in **Machine Intelligence** and **Data Science**, IIT Bombay

## Scholastic Achievements

- Bagged **98.70 percentile** in **JEE Advanced** examination among **2,45,000+** candidates *(2019)*
- Secured **98.82 percentile** in **JEE Mains** examination amongst **1 million** candidates *(2019)*
- Achieved **96.4%** in Class 12 Board Examination conducted by **CBSE** *(2019)*
- Among the top **300** candidates to have qualified for **Indian National Astronomy Olympiad** *(2018)*
- Scored **97.8%** in Class 10 Board Examination conducted by **CBSE** *(2017)*

## Professional Experience

**CodingDucks Technologies Pvt. Ltd** | *Data Analytics Intern* *(June 2021 - July 2021)*

- Analysed stock data to draw **Trend Lines** and show prevailing direction of price using **SciPy** Python library
- Constructed a **Python** script to output all **Active** and **Inactive** Trend Lines within user provided duration
- Matched closing values in current day data to historical data using **two-window** and **three-window** method
- Designed a program to identify technical indicators like **Cup and Handle** & **Head and Shoulder** patterns

## Key Projects

**Parallel Implementation of Face Recognition** | *Course Project* *(Mar 2021 - May 2021)*

*Guide: Prof. S. Gopalakrishnan, Dept. of Mechanical Engg, IIT Bombay*

- Worked in a **Team** of four and implemented the **LBPH** algorithm for **Facial Recognition** in **C++** language
- Used a **Python** script to convert dataset having 1020 images into greyscale format and stored the pixel values
- Parallelized code using **OpenMP**; performed timing study and achieved **5x** speedup running on **8** Threads

**Twitter Sentiment Analysis** | *Self Project* *(Dec 2020)*

- Classified tweets into **positive** & **negative** using machine learning models and visualised data by **WordCloud**
- Created a pipeline for Data Cleaning and Tokenization;trained a Naive Bayes Classifier with 94% test accuracy
- Accomplished 30% further improvement in the F1-score and 96% test accuracy on a **Multi-layered Perceptron**

**Image Classifier using CNN** | *Self Project* *(July 2021)*

- Built an image classifier on CIFAR-10 and MNIST image datasets using Deep **Convolutional** Neural Network
- Achieved a test accuracy of **81.2%** on the CIFAR-10 dataset containing 60000 images divided into 10 classes
- Performed **Data Augmentation** on MNIST dataset and achieved a state-of-the-art test accuracy of **99.1%**

**Molecular Dynamics Simulations of 2D Materials** | *Research Project* *(Sept 2020 - July 2021)*

*Guide: Prof. Amuthan A. Ramabathiran, Dept. of Aerospace Engg. IIT Bombay*

- Learnt about and utilized Data Visualization and **Modeling** software like ATOMSK, **LAMMPS** and **OVITO**
- Constructed a small scale **simulation** consisting of **1200 atoms** in a Silica Bi-layer structure using LAMMPS
- Visualised the deformations in the lattice and changes in the **Radial Distribution Function** using OVITO

**Temporal Analysis of heat transfer model** | *Course Project* *(April 2021 - May 2021)*

*Guide: Prof. Viswanathan Nurni, Dept. of Material Science, IIT Bombay*

- Used Python code to determine temperature distribution of a body by the explicit **Finite-Difference** method
- Calculated time required for body to reach **steady-state** and plotted the temperature variation at each node

## Technical Skills

- **Programming:** C++, R, Python, MATLAB, AutoCAD, SolidWorks, LaTeX, Microsoft Office
- **Libraries/Frameworks:** TensorFlow, PyTorch, Scikit-Learn, Numpy, Pandas, Matplotlib, Seaborn

## Extracurricular Activities

- Completed year-long training in **Table Tennis** under National Sports Organization(NSO) *(2020)*
- Stood **second** out of **100+** teams and won a prize worth **INR 13000** in RC plane competition *(2019)*
- Secured school **Rank 1** and awarded gold medal in **National Science Olympiad** conducted by **SOF** *(2017)*
- Participated in the summer camp on **Scientific Thinking in Everyday Life** conducted by **TIFR** *(2015)*
- Awarded **3rd Prize** in the M.R. Pai Memorial Elocution Competition *(2015)*