

HARSHAL BHATT

Junior Undergraduate

Department of Chemical Engineering, IIT KANPUR

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EDUCATIONAL QUALIFICATIONS

*At the end of 5th semester

Year	Qualification	Institution	Performance
2019 – Present	B.Tech. (Chemical Engineering)	Indian Institute of Technology Kanpur	8.01*/10
2018	Class 12 th – CBSE	Delhi Public School, Harni, Vadodara	94.2%
2016	Class 10 th – CBSE	Prodigy Public School, Wagholi, Pune	10/10

SCHOLASTIC ACHIEVEMENTS

- Secured **AIR 2626** in **JEE Advanced 2019** among the 0.17 million shortlisted candidates.
- Secured **AIR 5690** in **JEE Main 2019** amongst 0.94 million students.

WORK EXPERIENCE

Summer Intern | Trade Reboot, Mumbai

May '21 – Jul '21

Objective	<ul style="list-style-type: none">Develop an electronic signature module that allows clients to sign their documents digitallyUnderstand and implement the Blockchain-based deployment of the built signature application
Approach	<ul style="list-style-type: none">Used Gmail as a transport service to send personalized emails to clients using the Nodemailer moduleBuilt an electronic signature node application for digitally signing the trade documentsUsed MySQL database to store user information and hashes of the signed documentsLearnt about the Blockchain-based deployment of the signature module using Hyperledger Fabric

KEY PROJECTS

➤ **Audio Event Detection and Tagging** | Course Project – EE603, Prof. Vipul Arora 📧

Sep '21 – Nov '21

Objective	<ul style="list-style-type: none">Given a bunch of audio samples, predict the onset and offset times of Speech, Music in each of themFor each of the given audio samples find whether the audio is a Speech audio, Music audio or both
Approach	<ul style="list-style-type: none">Collected speech and music audios and prepared a dataset having 242 audio files of 10 seconds eachImplemented a Deep neural network with 5 hidden layers, trained the model using mfcc featuresDesigned an algorithm to predict the timestamps of occurrence of Music, Speech for the test audio samples
Outcome	Classified audio files into speech, music, or both with an accuracy of 93.3% and macro f-score of 0.938

➤ **Cross Validated** | Stamatics, IIT Kanpur 📧

Apr '21 – Jun '21

- Understood the ideas behind Maximum Likelihood Estimate and designed a **Probit Regression Model** from scratch.
- Trained the model using Titanic Dataset having **712** entries and **5** features to obtain the MLE of the regression coefficients.
- Predicted the chances of survival of the titanic passengers with an accuracy of **80.41%** and f-score of **0.76** on the test data.

➤ **Resume Screening** | Self Project 📧

Apr '21

- Used **regex** Python library to clean the raw resume data by removing unwanted characters like punctuations, white spaces.
- Implemented the **OneVsRest** strategy using **K-Nearest Neighbours** classifier to classify resumes into different job profiles.
- Achieved an accuracy score of **97.93%** and Weighted-average f-score of **0.977** for multi-class classification of the test data.
- Deployed the model using FastAPI framework with Jinja templates allowing users to upload and classify their resume's.

➤ **Forecasting Stock Prices** | Self Project 📧

Dec '20

- Worked with the historical Goldman Sachs Dataset with daily data from the year **1999** till **1st July 2021**.
- Ensured the stationarity of the data and used an **ARIMA** model to forecast the Adjusted Closed prices for the dataset.
- Analysed Auto Correlation and Partial Auto Correlation factors to make an initial guess of the ARIMA model parameters.
- Assessed the goodness of fit of different ARIMA models using the log-likelihood ratio test to find the best one.

TECHNICAL SKILLS

*Exposure

Programming Languages	Libraries and Frameworks	Software, Utilities and Tools
C, C++, Python, GNU Octave, MATLAB, JavaScript*	Pandas, NumPy, Scikit-learn, Matplotlib, FastAPI*, TensorFlow, Keras, librosa, Express.js	MySQL, Node.js, Git*, LibreCad, MS Office, LaTeX, Fusion360*

RELEVANT COURSEWORK

*Ongoing Course

Probability and Statistics	Data Structures and Algorithm	Introduction To Microeconomics	Financial Econometrics*
Linear Algebra and ODE	Fundamentals of Computing	Machine Learning in Signal Processing	Modern Cryptology

POSITIONS OF RESPONSIBILITY

➤ **Secretary** | Speed cubing club, IIT Kanpur

Apr '20 – May '21

- Helped the coordinators in efficiently handling and managing the given budget.
- Assisted the coordinators in presenting the club in the orientation programme for Y20 batch of IIT Kanpur.

➤ **Student Guide** | Counselling Service, IIT Kanpur

Oct '20 – July '21

- Entrusted with the responsibility of **six** freshers providing them academic and emotional assistance in online semesters.`.
- Coordinated with the Counselling Service and helped in the organization of Orientation Program for 1000+ students.

EXTRA-CURRICULAR ACTIVITIES

➤ **Cultural:** Participated in street play event in Galaxy 2020 and Freshers' Dance event.

➤ **Miscellaneous:** Served as a NCC Cadet during the Freshmen year, Avid solver of Rubik's cube and similar puzzles.