**ABHISHEK NARAYAN CHAUDHURY** **19I190005**
**Industrial Engineering & Operations Research** **M.Sc.**
**Indian Institute of Technology Bombay** **Gender: Male**
**DOB: 21-09-1996**

| Examination | University | Institute | Year | CPI / % |
|---|---|---|---|---|
| Post Graduation | IIT Bombay | IIT Bombay | 2022 | 8.86 |
| Graduation | Calcutta University | Ramakrishna Mission Residential College | 2018 | 66.17% |
| Graduation Specialization: Mathematics | | | | |
| Intermediate | WBCHSE | Jodhpur Park Boys' | 2015 | 85.60% |
| Matriculation | WBBSE | Ramakrishna Mission Vidyalaya | 2013 | 90.00% |

## SCHOLASTIC ACHIEVEMENTS

- Secured **33 rank** in IIT Entrance exam **among 12000+** for MSc
- Completed BSc in Mathematics with a **first class honours degree** from Calcutta University.
- Awarded **INSPIRE Scholarship** for securing among the top 1 % in Boards
- Selected in the **ISI QMS programme** for securing top rank in the ISI entrance exam

## POSITIONS OF RESPONSIBILITY

- **Internship Coordinator**(*Placement Office, Sep 2019 - Jun 2020*): Managed the internship process during 2019-20 with a group of **35 students for 1500+ students** across different departments and courses.
- **Teaching Assistant**(*IEOR Department, Jul 2021 - Dec 2021*): Responsible for evaluation of assignments & answer scripts, organizing crib sessions to address issues of **50+ students** for the IE507 Modelling Lab.

## SKILLS

- **Programming Languages:** Python (Tensorflow, Pytorch),Flask, SQL,R ,HTML, CSS, ReAct
- **Mathematical Software:** Matlab, AMPL (Gurobi), AnyLogic.
- **Academic:** Statistics (Advanced) , Machine Learning, Applied Probability , Time Series Forecasting Deep Learning, Optimization, Integer Programming, Simulation, Bandit Algorithms, Digital Image Processing.

## MASTERS' PROJECT

**High Dimensional Time Series Forecasting**
*Guide: N.Hemachandra, Aug 2020 - Dec 2020*

- Studied the **main issues are faced during modeling high dimensional time series forecasting models**, like the correlation between different features, upper bounds of different statistical quantities.
- Performed **comparative analysis of different forecasting models for high dimensional time series** forecasting and found DeepGLO methods perform better than DeepAR & LSTM methods in the un-normalized setting

**Fake News and Branching Process**
*Guide: V.Kavitha, Jan 2021 - May 2021*

- Considered an **Online Social Network** with controlled warning mechanism to deal fake news, without affecting authentic news & studied the effect of reluctant users that refuses to participate in the warning synthesis.
- Observed with Monte-Carlo simulations that with **20% of reluctance factor, there is 10% rise in the extinction and 0.06 increase** in the fraction of people with real tag thus highlighting the effectiveness of the mechanism.

## COURSE PROJECTS

**Automated Detection of Covid-19 from CT Scans**
*ME781: Statistical Machine Learning and Data Mining, Guide: A.Tiwari, Aug 2020 - Dec 2020*

- Considered **2-D CTScan image for pre-processing features normalized** as per our model parameters requirements for **Lung Segmentation and Image Analysis** using python libraries (like keras, scikit-learn, etc.).
- Used pretrained DenseNet model based on the CT Scan Image analysis of only input 2-D images

**Lottery Ticket Hypothesis**

*IE643: Deep Learning - Theory and Practice, Guide: P.Balamurugan, Aug 2020 - Dec 2020*

- Substantiated the existence of a **significantly pruned network** having comparable accuracy with original network and validated the hypothesis over LeNet and Feed Forward MLP networks on MNIST,
- Considered the plausibility of **transfering lottery tickets** obtained from a dataset to another in same domain

**HyperBand: A Novel Bandit Based Approach to Hyperparameter Optimization**

*IE613: Online Learning, Guide: M.Hanawal, Jan 2021 - May 2021*

- Reveiwed literatures on infinite armed bandit problems in context of Hyperparameter Optimization.
- Implemented HyperBand, an improvised version of Successive Halving, a robust, general-purpose solution to the Non-stochastic best arm identification problem, for **finding optimal Hyperparameter configuration.**

**Team Formation on Social Networks**

*IE716: Integer Programming: Theory and Computations, Guide: A.Mahajan, Jan 2021 - May 2021*

- Studied extensively about the set covering problem specifically focused it's utility to the team formulation **problem to form team to collaborate effectively**, and we do this by minimizing their communication cost.
- Learned about a **modified Branch and Bound technique** for the NP-hard quadratic programming problem.

**Simulation of (M,L) Inventory**

*IE630: Simulation Modeling and Analysis, Guide: J.Venkateswaran, Jan 2021 - May 2021*

- Simulated inventory management system analyzing **long-run cost under perishability, backordering of items**
- Evaluated the model for discrete and continuous review system under multiple factor combinations; Reported optimal (M,L) combination maximizing **mean monthly profit and fill rate is more than 99%**.

## SELF PROJECTS

**Fake News Checking with Python**

*Pirple Data Minning Online Course Project, Dec'20*

- Implemented python program to get news contents from **different online news APIs using request library**.
- Using Logistic Regression after the training on the features extracted from the news contents from the database using **stemming from nltk and Tfidf from sklearn**.

**Sports Data Analysis**

*Pirple Data Minning Online Course Project, Dec'20*

- Considered data for number of winnings between each pair of different teams, their rankings at the end of the league and performed **exploratory data analysis using numpy and pyspark**.
- Implemented **Decision Tree Classifier and Logistic Regression in pyspark** to predict the IPL rankings for the comming session and the probability of each team to for winning the title next season.

## CERTIFICATIONS

- **Machine Learning**: *Coursera Jul'21*
  Used the most effective machine learning techniques, and gained practice implementing them and learned not only the theoretical underpinnings of learning, **but also effectively apply it.**
- **Text Mining and Analytics:** *Coursera Sep'20*
  Learned about major techniques for mining and **analyzing text data to discover interesting patterns, extract useful knowledge,** using statistical approaches that can be generally applied to arbitrary text data
- **Applied Text Mining in Python:** *Coursera Jul'20*
  Learned about text mining and manipulation basics using regular expressions, cleaning text, and preparing text for applying **basic NLP tools to group documents by topics**
- **Microsoft Professional Orientation : Big Data:** *Edx May'20*
  Introduced to various ideas in Big Data Analysis more specifically on Data Fundamentals, Relational Databases, NoSQL Databases, Big Data Technologies
- **Data Mining With Python:** *Pirple Dec'20*
  Learned Cluster Analysis, Classification and Regression, SVM, SVC, SVR, Dimensionality Reduction using **Apache Spark**. Also learnt about Network Mining, Text Mining.