



**Kushal Kejriwal**  
**Electrical Engineering**  
**Indian Institute of Technology Bombay**

**190110040**  
**Dual Degree (B.Tech. + M.Tech.)**  
**Gender: Male**  
**DOB: 12/31/2001**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	

Pursuing a minor degree in Artificial Intelligence and Data Science, C-MInDS IIT Bombay

## SCHOLASTIC ACHIEVEMENTS

- Achieved Department Rank **1** out of **79** people in the the **Department of Electrical Engineering** (Dual Degree) (2021)
- Awarded **Change of Branch** to the **Department of Electrical Engineering** among 12 out of **1000+** students (2020)
- Conferred with the **AP grade** (Advanced Performer) for exceptional performance in **MA105 - Calculus** (2019)
- Achieved **99.78 percentile** in **JEE - Mains 2019** and **98.5 percentile** in **JEE - Advanced 2019** (2019)

## RESEARCH INTERNSHIP

- Feature Subset Selection using Multi-Class classification of Time-Series** (June 2021 - Present)  
Guide - Prof Nick Jones | Research Internship - Imperial College London
  - Completed a literature survey of 1 vs 1 feature based classification and implemented **1 vs all multi-class** classification on a test database using **greedy forward selection** to select 5 best features with an accuracy of **65%**
  - Built an extensive library by collecting **60+** data-sets each containing **100+** time-series and working on extending the test model on the library by calculating **7000+** features using the **HPC cluster, Imperial College London**

## POSITIONS OF RESPONSIBILITY

- Web Convener** (July 2020 - April 2021)  
Institute Technical Council, IIT Bombay
  - Responsible for developing the websites of **Institute Technical Council** and **technical clubs** of IIT Bombay
  - Conceptualised and developed a secure **web application** to display certificates for the students completing the Institute Technical Summer Projects using **Django Forms** and **Bootstrap** and enabled social sharing using **OpenGraph**
- Junior Design Engineer** (Aug 2020 - Present)  
Team Rakshak, IIT Bombay
  - Understood **ROS** architecture for controlling the robot and developed python codes for node to node communication
  - Working on setting up communication with the **Interop** server for the **AUVSI - SUAS** competition using python
- Teaching Assistant** (Nov' 2020 - Jan' 2021)  
MA109 - Calculus | Prof Ravi Raghunathan, Department of Mathematics, IIT Bombay
  - Responsible for conducting tutorial sessions for a batch of **40 students** throughout the course and helping them clear conceptual doubts through personal interaction and assisted in correction of answer sheets and assignments

## PROJECTS

- Algorithmic Trading** (July 2021)  
Self Project
  - Studied **candlestick** chart patterns, different trading styles such as intraday and swing trading and **technical analysis** using various technical indicators such as **moving average, bollinger bands and relative strength index**
  - Implemented and **backtested** various strategies such as trend following and **mean reversion** using a variety of technical indicators on the top 10 companies by market-cap in **Python** using the **Backtrader** library
- Movie Recommendation System** (April 2021)  
Guide - Prof Abir De | Course Project - Introduction to Machine Learning
  - Built a **user-user** based **collaborative filtering K-Nearest Neighbours** algorithm from scratch on python using **Pearson's correlation** as a similarity measure between users and achieved an RMSE score of **0.85**
  - Analysed and cross-validated recommendation algorithms on python using the **Surprise** library and implemented the **baseline estimates** and **KNN with means item-item** based algorithms to achieve an RMSE score of **0.75**
- ITSP Information Portal** (July 2020)  
Self Project
  - Ideated and Developed a **dynamic full-stack web application** to display information of various teams participating in the Institute Technical Summer Project using **ReactJS** and **Django REST API framework**

## TECHNICAL SKILLS

Languages	C++, Python, Julia, HTML, CSS, JavaScript, Markdown, $\text{\LaTeX}$
Softwares	Git, GNU Octave, GNURadio, AutoCad, SOLIDWORKS, Excel
Frameworks/Development	Pytorch, Scikit-Learn, Pandas, Numpy, Bootstrap, Django, ReactJS, NodeJS, Express