Anshuman Sharma | **203230018**
Systems & Control Engineering | **M.Tech.**
Indian Institute of Technology, Bombay | **Gender: Male**
DOB: 03-10-1997

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2022	7.65
Graduation	CSVTU, Bhilai (C.G.)	Bhilai Institute of Technology, Durg(C.G.)	2019	74.74%

Graduation Specialization: Electrical Engineering

AREAS OF INTEREST

Data Science | Computer Vision | Natural Language Processing | Deep Learning | Machine Learning

SCHOLASTIC ACHIEVEMENTS

- Secured **AIR 269** in **GATE-2020 (Electrical Engineering)** among 93,526 candidates *(2020)*
- Achieved **AA** Grade in **Applied Predictive Analytics** course

MAJOR PROJECT AND SEMINAR

- **M.Tech Project: Predictive Maintenance for Engineering Systems - Study and Applications**
  (Guide: Prof. PSV Nataraj, Systems and Control Engg., IIT Bombay) *(Jun'21 - present)*
  - **Objective: FDD** (Fault Detection and Diagnosis), **Anomaly detection** and **RUL** Prediction for Engineering Systems using **MATLAB**
  - Working on **DC Motor toolkit** and **Hybrid two tank system** for FDD of software and hardware faults using **Predictive Maintenance** and **Deep Learning** Toolbox MATLAB
  - Deploying **ML** and **DL** models for Anomaly detection and Condition Monitoring of system
  - Prediction of RUL using Identified models or Specialized RUL Estimator models
  - **Impact:** Developing a **dashboard** for **real-time** machine health monitoring and to plan maintenance in advance for eliminating unplanned downtime
- **M.Tech Seminar :Machine Learning Indoor Localisation using Access point selection (APS) and Signal Strength Reconstruction (SSR)**
  (Guide: Prof. Leena Vachhani, Systems and Control Engg., IIT Bomaby) *(Sept'20 - Dec'20)*
  - Performed literature study on **RSSI** measurement based Indoor Localisation
  - Studied **KNN** and Support Vector Regression **(SVR)** model with **RBF** kernel for SSR
  - Compared performances of conventional **SVR** model with SVR model along with Access Point Selection**(APS)** and **SSR**

KEY PROJECTS

- **Prediction of Loan Approval Status using Classification Techniques** | *Machine Learning*
  (Self Project) *(May'21)*
  - Applied various ML techniques like **Logistic Regression**, Random Forest, XGBoost on **Kaggle dataset** of **Loan Prediction Problem** and achieved best accuracy of **80%** with Logistic Regression
  - Performed uni-variate, multi-variate analysis and imputation for Exploratory Data Analysis
  - Utilized **GridSearchCV** of **Scikit-learn** for hyperparameter tuning.
- **Prediction of Air Quality Index (PM 2.5) using Regression techniques** | *Machine Learning*
  (Self Project) *(June'21)*
  - Analyzed underlying trends in AQI based on **Visualization** and **Exploratory Data Analysis**
  - Applied Machine Learning algorithms like **Decision trees, Random Forest, XGBoost** to achieve best **RMSE** of **36.8** $\mu g/m^3$ in XGBoost regressor
  - Used **RandomizedSearchCV** of **Scikit-learn** for hyperparameter tuning of models
- **Flight Price Prediction** | *Machine Learning*
  (Self Project) *(June'21)*
  - Performed **data pre-processing** and extracted new features as a part of **feature engineering**
  - Applied **Random Forest regression** and achieved R^2 score of **0.871** on test dataset
  - Utilized RandomizedSearchCV of Scikit-Learn for hyperparameter tuning

- **Fault Diagnosis of Rolling Bearing using Hybrid DL model** | *Deep Learning*
  (Self Project) *(July'21)*
  - Used vibrational dataset of **CWRU** bearing dataset to classify into different operating conditions
  - Applied Continuous Wavelet Transform **(CWT)** for converting vibrational signals into images and used **CNN** architecture for feature extraction from images
  - Used Random Forest classifier and achieved **95%** accuracy
- **Emoji Prediction for a Phrase** | *Deep Learning*
  (Self Project) *(Aug'21)*
  - Performed **EDA** and built the embedding matrix for text in dataset using **GloVe** vector
  - Deployed and trained **LSTM** model as text classifier for emoji prediction
  - Evaluated the model using **categorical cross-entropy** as loss function and **Adam** as optimizer
- **Semantic Image Segmentation** | *Deep Learning*
  (Self Project) *(Aug'21)*
  - Used **ResNet** architecture for feature extraction of input images
  - Deployed **Mask R-CNN** model for image segmentation and trained it on coco dataset

RELEVANT COURSES

- Machine Learning for Remote Sensing II
- Applied Predictive Analytics
- Modelling and Identification of Dynamical Systems
- Introduction to Probability and Random Processes
- Optimization
- Advanced Process Control

ONLINE COURSES

- Google Data Analytics Professional Certificate | (Couresra) *(Jan'21- Aug'21)*
  - Data Pre-Processing, Data Visualization, Tableau, R, SQL, Spreadsheet
- Deep Learning Specialization | (GUVI) *(Jan'21-July'21)*
  Instructor: *Prof. Mitesh Khapra and Prof. Pratyush Kumar,IIT Madras*
  - FNN, CNN architectures, Optimization, Sequence models using PyTorch, Tensorflow & Keras
- Foundations of Data Science | (GUVI)
  Instructor: *Prof. Mitesh Khapra and Prof. Pratyush Kumar,IIT Madras* *(July'21-Aug'21)*
  - Descriptive and Inferential Statistics, Probability Theory and Hypothesis Testing
- SQL for Data Science | Coursera (Offered by University of California, Davis) *(Aug'21)*
- Machine Learning Specialization | Coursera (Offered by University of Washington) *(Jan'21-Aug'21)*

POSITIONS OF RESPONSIBILITY

- **Company Coordinator** | *Institute Placement Team, IIT Bombay* *(June'21- till date)*
  - Part of a **45+** member team responsible for the placement of **1800+** students from **18** departments in the institute
  - Targeted **50+** new potential recruiters and currently managing the recruitment process for **45+** companies
  - Coordinated with PMs, DPCs for smooth conduction of the placement process in online mode
- **Interview Coordinator** | *Institute Placement Team, IIT Bombay* *(Dec'20)*
  - Coordinated with team of **250+** members for interviews of **1700+** students
  - Assisted in conducting tests for **15+** firms and handling student queries
- **Teaching Assistant** | *SysCon Department, IIT Bombay*

SKILLS

- **Languages:** C, C++, Python
- **Tools/Libraries:** MATLAB, LaTeX, Tableau, PyTorch, Tensorflow, NumPy, Keras, Pandas, Scikit-learn