Tanal Rajnikant Patel
Metallurgical Engineering and Materials Science
Indian Institute of Technology, Bombay

190110096
B.Tech.
Gender: Male
DOB: 18-01-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	

Scholastic Achievements

- Pursuing a Minor degree in **Computer Science and Engineering** at IIT Bombay
- Currently holding the **Department Rank 4** in the entire batch of **93 BTech** MEMS students *('21)*
- Secured **99.63** percentile in **JEE Mains** Examination amongst **1.15 million** candidates *('19)*
- Secured **98.64** percentile in **JEE Advanced** Examination amongst **1.65 lakh** candidates *('19)*

Positions of Responsibility

Department Academic Mentor *(Jun'21 - Present)*
Department Academic Mentorship Program | IIT Bombay

- Part of **32** member team selected on the basis of **peer reviews** & interviews, which is mentoring **120+ students**
- Mentoring the **academic performance** of **6 second-year** students providing academic guidance and counsel
- Member of the subgroup responsible for organizing various insightful events regarding placements, internship and opportunities in **higher studies** through interaction with esteemed alumni

Social Secretary | Hostel 2 IIT Bombay *(Sep'20 - Apr'21)*
Part of a 37-membered Hostel 2 Council responsible for executing all events for 500+ Hostel inmates

- Ideated and executed **12 major** events & sessions carried out amidst the online semesters throughout the year
- Introduced an **online crypt hunt** comprising **25** fun and challenging riddles during the annual hostel fest
- Planned and conducted Sophomore Resume making workshop attended by **75+** students
- Organised **Fantasy IPL** in which 1 out of every 4 residents registered, achieving a total of **100+** participation

Key Projects

Modelling Microstructural Evolution *(June'21-Present)*
Summer Undergraduate Research Program | Prof. M.P. Gururajan

- Simulated an example code of uni-axial compressive loading on Cu FCC crystal structure using **Ovito** software
- Optimized the energy of **perturbed** 2D hexagonal lattice by incorporating **Monte Carlo** relaxation on **LAMMPS**
- Implemented **Monte Carlo** simulation on Copper-Aluminium alloy system to minimize **Stacking Fault Energy**

Credit Card Fraud Detection | Course Project *(April'21)*
Guide: Prof. Abir De | Department of Computer Science Engineering

- Performed **exploratory data analysis** on credit card transactions to identify key features of fraud transactions
- Employed **random under-sampling**, bagging and boosting to overcome the problem of **skewness** in the dataset
- Trained **classification models** like Random Forest, Support Vector Machine, Adaboost, Neural Networks and Logistic Regression on the data and compared their performance based on their **F1 score** on the test dataset

Automated Deck Shuffler | Course Project *(April'21)*
Guide: Prof. Shantanu Tripathi | Dept. of Mechanical Engineering

- Designed and assembled the working model of an **automated deck shuffler** using **SolidWorks** in a team of four
- Identified potential failure points by performing **FMEA**& **Stress Analysis** on different parts of the model
- Animated the working procedure of the model and prepared a **technical pitch** presentation of the final product

Technical Skills

- **Languages:** C++, Java, Python, R | **Softwares:** MATLAB, AutoCAD, Solidworks

Extracurricular Activities

- Received certificate of completion for four modules under **Varsity Zerodha**
  Stock Market Basics | Technical Analysis | Futures Trading | Options Trading
- Devoted **80+ hours** of social service under National Service Scheme **Educational Outreach**
- Taught high school mathematics to underprivileged students under **Vidhya BS in NSS EO**
- Worked in a team of 3 people and pitched a startup idea in **EnB buzz** conducted by ECell