Akshat Mehta | **190100011**
Mechanical Engineering | **B.Tech.**
Indian Institute of Technology, Bombay | **Gender: Male**
DOB: 19-06-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	
Intermediate	HSC	Shri T P Bhatia College Of Science	2019	89.54%
Matriculation	ICSE	Ryan International School, Malad	2017	95.40%

Pursuing a **Minor** degree in the Department of **Computer Science & Engineering**

Scholastic Achievements

- Secured **All India Rank 669** in **JEE Advanced** out of 245,000 candidates ('19)
- Secured a percentile of **99.75%** in **JEE Mains** out of 1.1 million candidates ('19)
- Secured a percentile of **99.93%** in **MHT-CET** out of 275,000 candidates ('19)

Conference Presentation

- Jagdale K., **Mehta A.** et al. "*Technology Demonstration of Antenna Deployment System on PSLV Stage 4 Orbital Platform*" extended abstract presented in National Conference on Small Satellite Technology & Applications, Trivandrum, India, 2020

Professional Experience

Jefferies India Private Limited | Equity Research Intern *(May'21 - Jul'21)*

Jefferies is an American multinational independent investment bank & financial services company, headquartered in NYC

- Supported the Pharma and Healthcare Research team in the preparation of a **110-page** long report called "**India: Dawn of eHealth**" which focused on the growth of India's health-tech and pharma industry
- Analyzed the **financial statements**, key financial ratios and annual reports of multiple health-tech firms in the country
- Composed fundamental analysis report on multinational Pharma firms, **Sun Pharma** and **Dr. Reddy's Laboratory**
- Attended **conferences**, presided by **CEOs** of several healthcare firms, with key focus on changing customer behaviour, industry-wide digitization and growth in different sectors impacted due to COVID-19

Team Lead - Marketing and Strategy | Avacads EduSolutions Pvt. Ltd. *(Apr'21 - Present)*

Mentored by Prof. Sarin & Dr. Rao, An EdTech startup aiming to provide high-school students internships & social opportunities

- Successfully managed to raise a fund of **INR 2 Lacs** and got incubated at **IDEAS Program** Level 2 Cohort 4 at IIT Bombay
- Managing a **team of 16** to collectively manage sales and marketing, pitched to **10+** NGOs, startups and schools
- Analysed National Education Policy 2020 and conducted market research reaching out to **500+** potential customers

Technical Projects

IIT Bombay Student Satellite Program *(Feb'20 - Present)*

A 70-member student team with the vision of making IIT Bombay a center of excellence in space technology

Sanket | **Electrical Subsystem**

The mission aims to develop an indigenous Antenna Deployment System with TRL-8

- Designed and routed the Auxiliary testing and flight **PCB**s on **EAGLE** software to interface with PS4-OP, responsible for scheduling tasks while performing power, data management and communication on the CubeSat
- Revised and updated the **power budget** of the satellite during communication and deployment modes
- Simulated to find apt thickness of **Aluminium 6061-T6** sheet required to shield electrical components on **SPENVIS** after studying the types of radiations, its effect on the components & the 6 flight parameters describing satellite orbits
- Simulated and implemented **USART** and **SPI** protocol between two **ATmega128** microcontrollers using **Proteus**

Traffic Clearance for Ambulances *(May'20 - Jul'20)*

Institute Technical Summer Project (ITSP) | Institute Technical Council (ITC) *IIT Bombay*

- Led a team of three in developing an online **app service** to notify vehicle users of an incoming ambulance
- Applied Distance Matrix & Roads API on **Flutter** with Android Studio, updated data parameters real-time on **Firebase**
- Collaborated on **GitHub** and delivered a fully functional application with UI and authentication

Hands-free Elevator Mechanism and Auto-sanitization *(Jul'20 - Aug'20)*

Institute Technical Council (ITC) *IIT Bombay*

- Worked in a team of two to design a mechanism to make the elevator ride contactless as a precaution for the pandemic
- Implemented the concepts of fluid compression and Pascal's law to ideate and design a product prototype that uses foot pedals to press floor buttons, further modeled it on **Fusion 360** and simulated it on **Ansys**
- Designed an auto-sanitization system for the elevator by integrating **ultrasonic sensors** and programming the **Arduino Uno** microcontroller board and simulated results on **Tinkercad**

Software development for a Personal Weather Station
(Oct'20 - Apr'21)

Guide: Prof. Sridhar Balasubramanian | iSURP | UGAC — *IIT Bombay*

- Developed backend on AWS for storage, handling and tracking of multiple **Arduino** based Personal Weather Stations (PWS) data and integrated with the frontend website deployed on **Heroku**
- Communicated the data with the server using the GET/POST API by Node.js

Course Projects

Finite Element Modeling (FEM) of Rolling Process
(Mar'21 - May'21)

Guide: Prof. Ramesh Singh (Department of Mechanical Engineering) — *Course: ME206*

- Studied several research papers on **FEM** of Rolling process and analysis of the parameters which affect the process
- Simulated and modelled a four-step sheet rolling process on **Abaqus** with appropriate boundary conditions
- Analyzed & reported the **stress-strain relation** due to the variations in roll diameter, roll speed and work-piece speed

Comparative Analysis of Face Recognition Techniques
(Mar'21 - May'21)

Guide: Prof. Abir De (Department of Computer Science & Engineering) — *Course: CS419*

- Conducted a comparative study of Machine Learning models and techniques for facial recognition on a subset of Yale Extended B Dataset, with **2470 grayscale images** of **39 subjects** under varying lighting conditions
- Tested different ML models including **Logistic Regression & SVM**, along with feature extraction using **PCA** & **VGG16**
- Achieved a maximum accuracy of **98%**, as compared to the global best of 99.2%

Modifications of wheelchair for the elderly
(Sep'20 - Dec'20)

Guide: B K Chakravarthy (IDC School of Design) — *Course: DE414*

- Performed **user study** of the existing wheelchairs and analyzed the need for a self-sufficient wheelchair
- Designed and built a **working rig** based on the requirements and feedbacks from the user research

Position of Responsibility

Subsystem Head | Electrical Subsystem
(May'21 - Present)

IIT Bombay Student Satellite Program — *IIT Bombay*

- Recruited **9 students** from **100+ applicants** evaluating their technical ability, practical approach and teamwork skills
- Supervised a team of **10** to develop flight codes and circuit boards of satellite
- Established quality assurance practices in the electrical subsystem to ensure reliable design process

Department Academic Mentor | Mechanical Department
(May'21 - Present)

Department Academic Mentorship Programme (DAMP) — *IIT Bombay*

- Part of a **39-member team** selected on the basis of peer reviews, which mentors **170+ students**
- Monitored academic performance of **14 second-year students** providing academic guidance and counsel
- Acting as the **First Point of Contact** aiding the communication between the faculty and students
- Arranged and hosted a session on Dual Degree Specialization with **5 speakers** and an audience of over **60+** students

Teaching Assistant | CE102: Engineering Mechanics
(Mar'21 - June'21)

Assistant to Prof. Manish Kumar — *IIT Bombay*

- Served a batch of **100+ freshmen**, conducted bi-weekly tutorial sessions, special doubt sessions, and proctored quizzes
- Employed sharp communication skills & conducted timely help sessions that benefit the academically weaker students

Project Mentor | Summer of Science
(May'21 - Present)

Maths and Physics Club — *IIT Bombay*

- Mentored a junior student to familiarize him with the concepts of **Economics** for a **two-month** summer project
- Covered key concepts of Macroeconomics and Microeconomics, reviewed his work and project report

Technical Skills

Programming Languages : C/C++, Java, Python, DART for Flutter
Softwares : AutoCAD, Fusion 360, SolidWorks, EAGLE, Proteus, MATLAB, SPENVIS, Flutter by Google, Ansys

Extracurriculars

- Completed year-long training in **Squash** under the National Sports Organization (NSO)
- Built an efficient model of a **4-wheeled bot**, programmed by ATtiny processor and controlled with a mobile app via Bluetooth for XLR8 competition, conducted by Electronics and Robotics Club
- Took professional Tennis coaching lessons for a year and attended Cricket Summer Camp
- Learnt **French** language for 4 years under the ICSE school curriculum
- Attended a plantation campaign by Green Yatra and helped plant over **100 plants**
- Undertook several online courses like **Game Theory**, **Project Management**, **Mechanics of Materials**, **Machine Design** and **Introduction to MATLAB** on Coursera