Pursuing a **Minor degree** offered by the **Mathematics Department IIT Bombay**. *2020*

## Scholastic Achievements

- **Department Rank of 1** among **70+** students in Department of Aerospace Engineering *2020*
- Secured a **percentile of 98.9** in JEE Advanced in a total participation of **170,000+** students *2019*
- Achieved **99.83 percentile** percentile in JEE Mains out of **1.1 million+** candidates *2019*

## Positions of Responsibility

**Institute Secretary of Technical Affairs** *2021*

- Elected to represent the aeromodelling community of the institute, catering to an audience of **8000+** enthusiasts
- Organized the **Boeing National Aeromodelling Competition** for IITBombay region, consisting of **5000+ students accross schools and colleges of 5 states** belonging to the western zone
- Conducted a **national level** quiz competition which attracted a participation of **120+**
- Organised Institute Technical Summer Projects, handling the logistics of **50+ projects and mentors**
- Designed a course on aircraft design and stability using **XFLR5**, under the banner of Learner's Space, attracting a participation of 60+ enthusiastic students across the institute

**Technical Convener**|Aeromodelling Club IITB *2020*

- Key contributions in institute wide events like glider workshop and Aerial-Path General Championship, involving **prototyping, problem statement design and content delivery** to **120+ participants**
- Part of the web team responsible for revamping the club website, making a professional, responsive website with features like blogs, galleries and parallax scroll **way-point navigation and PID design**

**Teaching Assistant** | Bioscience and Bioengineering Department, IIT Bombay *2021*

- Mentored two batches of **25+ freshmen** Undergraduates in Physical Biology and Biomedical Engineering
- Conducted **weekly tutorials**, where apart from **teaching, doubts were taken and discussions** were conducted

## National Level Competitions

**Boeing Aeromodelling Competition** | Techfest Competition *(Dec' 2019 - Jan'2020)*

- Engineered an aerial vehicle optimized to carry **maximum payload** for a given span and thrust to weight ratio
- Achieved the above problem statement by using **iterative weight estimation** to combine **historical data and mission parameters** to obtain the design parameters best suited for the mission
- Secured a spot among **top 30 teams**, among teams from all over the western part of the nation

**Skyrush Competition** | Techtatva *Nov'2019*

- Participated and secured **First place** in the competition, which involved designing(virtual) an UAV with mission requirement to carry most sanitizers and PPA kits and dropping it in specified location
- Tested, by CAD, multiple **manufacturing techniques** for wing and tail to minimize weight
- Performed a detailed analysis to draw parallels between **tricycle landing gear** size and performance

## Key Technical Projects

**Mission analysis of CRS 17** *March 2021*

Guide: Prof. Ashok Joshi | Course Project

- Traced the path of **Falcon9** resupply mission to ISS, with the help of ISS's trajectory and launch parameters
- Determined a possible trajectory, complete with **ascent mission, gravity turn and orbital maneuvers**
- Employed a **constant thrust gravity maneuver** whose parameters were determined by varying specific thrust at various stages and plotting the results using python, to find the most optimized specific thrust value

**Verification of Gabrielli-Karman Line** *March 2021*

Guide: Prof. Kowshik Bodi | Course Project

- Analyzed vehicles across a **timespan of 20+ years** and compared the trends in cost per passenger, emissions per passenger and plotted it's speed and specific tractive forces, to compare it with the **Gabrielli-Karman Line**
- Recognised the relation between aforementioned parameters and their place in the plot, hence efficiently **predicting the places of outliers** like **electric cars, supersonic passenger plane and antique vehicles** in the plot

| **Skills** | Programming: **Python, C++, MATLAB** \| Software: **git, SolidWorks, ANSYS, XFLR5** |
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