Piyush Porwal			190010051	
Aerospace Engineering			**B.Tech.**	
Indian Institute of Technology Bombay			**Gender: Male**	
			DOB: 25-10-2000	

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	
Intermediate	CBSE	Innocent Children Academy	2018	86.40%
Matriculation	CBSE	Innocent Children Academy	2016	8.4

Pursuing a **Minor** Degree in **Systems and Control Engineering**, IIT Bombay

TECHNICAL PROJECTS

UAV FOR COVID SUPPLIES DELIVERY   [Sep'20-Oct'20]

National Level Competition - Skyrush, Manipal Institute of Technology
- Designed an aircraft with a target range of 3 km to carry maximum PPE kits and hand sanitizers as a payload
- Developed the idea for **landing gear mechanism** and 3D-model prototypes to fit a variety of constraints
- **Overall winners** of the competition after two rounds while competing against the **top** teams at the **national level**

CONVAIR - THE PUSHER PLANE   [Dec'20-Feb'21]

Self Project - Aeromodelling Club, Institute Technical Council, IITB
- Engineered a Radio-Controlled **pusher plane** from scratch with a **shock-absorbing** design to minimize damage
- Studied the **mechanism** and **different structures** of various types of pusher aircraft and necessary components
- Identified **thrust-moment** coupling as a cause of the crash and hence used **tilt** motor angle to prevent failures
- Extensively **researched** the fabrication of the design to enforce **stability, versatility, tenacity** of the build
- Ensure the least drag, fine tuning of the control surfaces to manoeuvre the aircraft model successfully

AIRCRAFT DESIGN CHALLENGE   [Mar'21-Apr'21]

One of the 15 finalists among 45+ teams in National Level Competition - AeroDes, Techkriti, IIT Kanpur
- Designed a **dual-purpose RC aircraft** using SolidWorks that is able to take off from a short runway to deliver a payload
- Prepared conceptual prototype of the aircraft and analyzed using **XFLR5** for lateral, longitudinal and bending stability
- Represented IITB at the national level and presented the design to a panel of **eminent professors** and senior students

SPACECRAFT TRAJECTORY PLANNING AND ANALYSIS   [Feb'21-Apr'21]

Course Project- Prof. Ashok Joshi, Department of Aerospace Engineering, IITB
- Accumulated data, identified the design parameters regarding launch and mission objectives of Cartosat-2F satellite
- Conducted literature study of **Cartosat-2F** launch mission along with specification study of its launch vehicle **PSLV-XL**
- Simulated and estimated launch trajectory of PSLV-XL on **Python** to match valid terminal orbital parameter with an accuracy of **95%** in velocity, **93%** in height and **94%** in angle using appropriate stage-wise burn profiles

GAS TURBINE ENGINE ANALYSIS   [Oct'20-Nov'20]

Course Project- Prof. Krishnendu Sinha, Department of Aerospace Engineering, IITB
- Estimated the thrust generated by a **Boeing 787 Dreamliner** aircraft engine **GEnx-1B** during takeoff and cruise conditions using **thermodynamics principles** and studied the working of a real-life aircraft engine GEnx-1B
- Verified and validated calculated values from available datasheets and minimize the errors iteratively using excel sheet
- Evaluated unknown engine parameters like overall efficiency using **equations of thermodynamics** and inlet engine data

POSITIONS OF RESPONSIBILITY

MANAGER, AEROMODELLING CLUB| *Institute Technical Council IITB*   [May'21-Present]

- Supervised a team of **10 conveners** towards fostering the enthusiasm of **500+ students** in aeromodelling projects and activities and having social media engagements of 14,000+ online with an annual budget of over **INR 500,000**
- Orchestrated national **Boeing Aeromodelling competition** 2021 in collaboration with **Boeing,** handling the IITB zonal consisting of 5 states with 5000+ students of various colleges and schools and conducted webinars for the same
- Designed a course on **aircraft design and stability analysis using XFLR5** under the Technical Summer School held by the Institute Technical Council & Undergraduate Academic Council and took classes for **100+** students
- Adapted the structure and events of the club to an **online format** to engage enthusiasts during the COVID-19 pandemic by organizing **TRIVIAJET,** the annual aero quiz with **120+** participants all over India
- Restructured the **Technical GC** and replaced it with institute wide **industry-based problem statement** competition
- Coordinated the **Institute Technical Summer Projects** (ITSP) 2021, a platform for developing self-ideated projects

ACADEMIC MENTOR | *Department Academic Mentorship Program (D-AMP), IITB*   [May'21-Present]

One among the 23 mentors taking responsibility for the academic and mental well-being of the students
- Selected as a mentor after a rigorous interview process, **ethical assessment** along with extensive **peer reviews**
- Responsible for mentoring **eight sophomores** from the department to ensure the transition into the academic and social life at IIT Bombay and supporting in their overall development
- Part of a small team working on the content creation of the DAMP Blog to improve student-centric aspects in the department

CORE TEAM MEMBER | *Aeromodelling Club, Institute Technical Council, IITB*   [Apr'20-May'21]
- Part of a **12-member** team catering to **1000+** aeromodelling and aerial robotics enthusiasts in the institute
- Headed **Facebook team** and expanded to **14,000+** people monthly by developing its online public outreach
- Organized **Pluto-X hackathon** in collaboration with **Drona Aviation** and mentored students to learn drone programming
- Conducted Aeromodelling General Championship and designed problem statement based on **trajectory planning**
- Contributed various innovative, practical and feasible **event ideas**, along with budget estimates and timelines

MARKETING COORDINATOR | *Techfest*   [May'20-Jan'20]

Asia's largest Science and Technology Festival; 175,000 footfalls for 100+ events
- Managed **100+** College Ambassadors from 30+ universities across India to conduct various competitions
- Negotiated with **10+** companies to procure sponsorship for Techfest, IIT Bombay

DEPARTMENT WEB NOMINEE| *Aerospace Engineering Association (AeA), IITB*   [Apr'20-Mar'21]
- Collaborated with the team to design, modify and maintain an **interactive website** of the AeA council
- Enhanced user experience and accomplished webpage objectives by creating site structure, navigation, page optimization, and graphics integration and regularly updating the department activities

TECHNICAL/SOFTWARE SKILLS

- **Programming Languages**: Python, MATLAB, Basics of C++, Robot Operating System (ROS), HTML, CSS
- **Software Packages**: Simulink, XFLR5, SolidWorks, AutoCAD, Arduino IDE, Latex
- **Designing:** Adobe Illustrator, Adobe Photoshop, Premiere Pro, After Effects

KEY COURSES UNDERTAKEN

Aerospace Engineering	Spaceflight Mechanics, Compressible Fluid Mechanics, Aircraft Propulsion, Aerospace Structural Mechanics, Aerospace Measurements Laboratory
Systems and Controls	Signals and Feedback Systems, Mathematical Structures for Systems and Control
Computer Science	Computer Programming and Utilization, Introduction to Python for Data Science, Automate the boring stuff with python, Data Analysis and Interpretation
Mathematics	Introduction to Numerical Analysis, Calculus, Linear Algebra, Differential Equations
Miscellaneous	Introduction to Electrical and Electronics Circuits, Engineering Graphics and Drawing, Economics

EXTRACURRICULAR ACTIVITIES

NCC	- Completed **captain training camp** which involved intensive training of the best among 150+ cadets - Part of the contingent to march on the **70th Republic Day Parade** of NCC cadets of IIT Bombay - Undergone rigorous training in **inter-college** Annual Training Camp (ATC) conducted for ten days - Fired five rounds of 0.22 **Sporting Rifle** with great precision during Annual Training Camp
SOCIAL	- Volunteered in **Career Counseling Campaign** conducted by **Abhyuday, IIT Bombay** - Donated one unit of blood and contributed to a **donation drive** organized by **Red Cross Blood Bank**
TECHNICAL	- Participated in **e-Yantra Robotics Competition** (eYRC) organized by **IITB** and sponsored by **MHRD** - Delivered a **talk** on piloting and autonomous aerial vehicles conducted by Hostel 6 - Participated in a General Championship among **100+** participants from hostels for designing a Glider Aircraft
CULTURAL	- Secured **1st position** in group dramatics competition during NCC Cultural General Championship - Featured in a music video for Music Video Arcade conducted by **Silverscreen IIT Bombay** - Designed posters by spending **50+ hours** in Adobe Illustrator for various Aeroclub events
SPORTS	- Represented Hostel 6 in **Hostel Athletics** General championship (**1600m**) - Participated in NCC Crossy **Marathon (5km)** General Championship