**Soham Shirish Phanse**  
**Aerospace Engineering**  
**Indian Institute of Technology, Bombay**

19D170030  
**B.Tech.**  
**Gender: Male**  
**DOB: 26-11-2000**

| Examination | University | Institute | Year | CPI / % |
|---|---|---|---|---|
| Graduation | IIT Bombay | IIT Bombay | 2023 | 8.87 |

- Pursuing a **Minor** in **Artificial Intelligence and Data Science, IIT Bombay** *(2021)*

## Scholastic Achievements

- Awarded **Undergraduate Research Award 01** (IIT Bombay) for developing a *Systems Theory based* *(2021)* *framework for modelling Static and Dynamic energy usage in Industry*
- Secured a merit-based **Branch Change** to Department of **Aerospace Engineering**, IIT Bombay *(2020)*
- Awarded **Scholarship for Higher Education** (SHE) under **INSPIRE** by virtue of performance within the **top 1%** of the Maharashtra State Board at the Class XII level *(2018)*

## Publications

- Katla V., **Phanse S.** et al, "An Approach to Star Tracker Design for Nano-Satellite Applications" (extended abstract) presented in **National Conference on Small Satellite Technology & Applications**, India, 2020

## Technical Projects

**IIT Bombay Student Satellite Program** *(Mar 2020 - Present)*  
*A 70-member student team dedicated to the vision of making IITB a center of excellence in space technology*  
**Star Tracker based Attitude Determination System | Mechanical Subsystem**  
*A CubeSat-compatible Star Tracker based Attitude Determination System (STADS) to be tested on PS4-OP*

- Worked on the structural design by making **CAD** Models on **SolidWorks**
- Performed structural simulations in **ANSYS** (FEM) to simulate launch loads from **PSLV**
- Modified the structural design to include OV7670 as the imaging system and **3D printed** a prototype

**Systems Engineering Analysis of Autonomous Surveillance System** *(Jan 2021 - May 2021)*  
*Course Project | Guide: Prof. Hemendra Arya, Department of Aerospace Engineering*

- Conceptualized multiple configurations and finalized one by comparing parameters like surveillance unit topology, vehicle parameters, communication protocols with help of **Decision Matrices**
- Formulated functional, performance, transition, support and disposal **requirements** and **testing** plan
- Implemented Operational Capabilities, System Architecture and Operational Scenario Diagrams in **Capella**

**Big Data Analysis of NASA's 5 Millennium Solar Eclipse Database** *(Mar 2021 - Jun 2021)*  
*Guide: Prof. Amuthan Ramabathiran and Prof. Prabhu Ramchandran, Department of Aerospace Engineering*

- Identified random variables, and computed **sampling distributions** of Mean and Variance, computed **confidence intervals**, formulated a **Null & Alternate Hypothesis** and tested it in **Python**
- Performed **Regression Analysis** on the variables and fitted a linear relation with **Least Squares Estimation**

## Positions of Responsibility

**Subsystem Head | Mechanical Subsystem** *(May 2021 - Present)*  
*Student Satellite Program, IIT Bombay*

- Leading an interdisciplinary team of 6 members to develop the structural and thermal design of the system
- Executed a **three-step recruitment** process to select **6 students** for the subsystem out of **70+ applicants**
- Compiled rigorous **quality assurance** practices for CAD in SolidWorks and Structural simulations in ANSYS

**Department Academic Mentorship** *(May 2021 - Present)*  
*Department of Aerospace Engineering, IIT Bombay*

- Selected into a **team of 23 mentors** based on extensive **peer reviews and interviews**, to monitor the academic performance of **6 second-year** undergraduate students and provide academic guidance and counsel
- Involved in bridging the student-faculty gap, thereby enhancing the students' academic experience

**Manager, Controls & Dynamical Systems Student Reading Group** *(Jun 2021 - Present)*  
*Institute Technical Council, IIT Bombay*

- Ideated a series of upcoming events like **Blog**, **Instagram handle** and **talks** by eminent speakers
- Collaborating with Aeromodelling Club to arrange mentors for launching projects like designing ornithopter, autonomous drones and thrust vectoring rocket

## Extra-Curricular Activities

- Mentored students for **Student Solar Workshop - 2019**, a training program to assemble solar lamps and contributed to **Guinness World Record** for lighting most number of Solar lamps simultaneously *(2019)*
- Organized a day-long workshop and delivered a short talk on '**Structural Design of Ground Station**' for equipping **150 participants** from **40+ universities** to set up a ground station *(2021)*
- Received **SSTV** images broadcasted from the **International Space Station** *(2021)*
- Learned playing acoustic and non-acoustic **Guitars** in a 3 year long course *(2013 - 2015)*
- Devoted **80** hrs of social service towards **sustainability** as a part of **NSS, IIT Bombay** *(2019 - 2020)*