

Pursuing a minor in **Systems and Controls** engineering

ACADEMIC ACHIEVEMENTS

- **8** and ranked **first** in **Maharashtra** in **The Mathematical Genius Award** Olympiad (2016)
 - Felicitated by **The Rotary Club of Bombay** and received a **Student Excellence Award** from school for scoring **full marks in Mathematics and Computer Science** in the ICSE Board Examinations (2016)
 - Awarded the **Prathibha Scholarship** from **Aditya Birla Group** (2020)
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PROJECTS

- **Student Satellite Program, IIT Bombay** (May 2020 - present)
A 70-member student team with the vision of making IIT Bombay a centre of excellence in space technology
Guidance, Navigation and Control | Rendezvous and Docking System
A simulation framework for the autonomous docking of a Chaser Satellite with a Target Satellite
 - Applied principles of **Systems Engineering** by examining similar missions and assessing their parameters in the process of **benchmarking** and finalized the **requirements** of the mission
 - **Surveyed literature** to analyze efficiency of **position and orientation control algorithms** like H_∞ , μ -Synthesis, Model Predictive Control and Linear Quadratic Regulator to select suitable controllers
 - Covered control theory concepts such as **stability, controllability, observability and Lyapunov stability** for a skill development project and implemented it on a **spring-mass-damper system**
 - Studied **Euler's equations of motion** and modelled the dynamics of a CubeSat in the case of moment-free motion, and when moment is proportional to the angular velocity of the body
 - **Institute Technical Summer Project (ITSP) | Institute Technical Council** (May 2020 - July 2020)
Part of a 4-membered team working on a pen-type portable device to enable writing in air
 - **Modelled** and **filtered** the **noise** from accelerometer readings recorded on an Android device by creating a **signal processing** block utilising the Moving Average Filter and a High Pass filter
 - Implemented code in Python to convert the filtered readings from **body frame to inertial frame**
 - **General Topology | Summer of Science** (April 2020 - June 2020)
Self-Learning Project under the Maths and Physics Club, IIT Bombay
 - Studied preliminary Set Theory, definitions of Topology, Basis, Subbasis, Open sets, Closed Sets, Limit points, Hausdorff spaces, and a generalised definition of continuity
 - Understood Product Topology, Metric Spaces and Metric Topology, and the Quotient Topology
 - **International Micromouse Challenge | Techfest, IIT Bombay** (October 2019 - January 2020)
A bot that travels from one corner of an arbitrary 16×16 maze to its centre in the shortest possible time
 - Conducted research on different maze solving algorithms, implementing **flood fill** in a Python script to map out the maze and chart the shortest path to be followed by the bot when traversing through it
 - Implemented a **PID controller** to make the bot track its desired path with an accuracy of at least 2.5 cm
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TECHNICAL SKILLS

- **Languages:** Python, C++, Java, HTML, \LaTeX
- **Softwares:** MATLAB, AutoCAD, SolidWorks

INTERNSHIPS

- **Content writing | Intern of the Month | Pranyas Development Foundation** (July 2020)
Non-profit organisation focused on women empowerment, children's education, human rights development
 - Marketed the **HOPE Model**, where a team of 20 donors fund a child's education until they are capable of earning by themselves and the **PAN India Model** to help essential workers during the pandemic
 - Wrote for the "**We always have a choice**" project, geared towards raising awareness about social issues
 - Wrote **blogs** addressing social issues such as education during the pandemic, sexual harassment and abuse, sex education in India, domestic violence, child labour and environmental issues
 - Supervised the team for a day, choosing to focus on the topic of **mental health awareness**, delegated work accordingly, and **conceptualised models** the NGO could adopt to make a difference in the same
- **Market Research Intern | CouloumbAI** (7 December 2020 - 15 January 2021)
Mobility Intelligence for Electric Vehicles
 - Performed **exhaustive research** on the attributes of the four wheeler electric vehicles available in the Indian market and documented the findings in a comprehensive report
 - Presented a comparative study of the **Total Cost of Ownership** of four wheeler vehicles in Bangalore
 - Worked on the implementation of **preventive maintenance algorithms** on electric vehicles
- **Research Intern | Reinforcement Learning** (June 2021 - Present)
 - Currently working under Prof. Zoran Tiganj of the Computer Science department in Luddy School of Informatics and Engineering, selected under the Global Talent Attraction Programme (GTAP)

POSITIONS OF RESPONSIBILITY

- **Head, Guidance, Navigation & Control Subsystem | Student Satellite Program** (June 2021 - Present)
 - Executed a **3-step recruitment process** to evaluate and select **12 students**, testing their practical skills, technical ability, teamwork and motivation
 - Supervised a **13 member team** in **quality assured** projects regarding the guidance, navigation and control subsystem, while ensuring **Systems Engineering** practices are being followed
- **Coordinator, Horizons | 50th Edition | Mood Indigo, IIT Bombay** (May 2020 - December 2020)
Asia's Largest College Cultural Festival | 100k+ viewership | 100+ events | 2000+ Colleges
 - Invited 20+ artists from 4 countries to exhibit **international performances** at the 50th Mood Indigo
 - Spearheaded a team of 15+ organizers to execute events in various genres of Horizons
 - Ideated and structured **Humour Fest**, the flagship event of 50th Mood Indigo and negotiated with renowned Indian artists to showcase 5+ events in Humour Fest

EXTRA-CURRICULARS

- Trained in **Bharatnatyam** for over **eight years** and completed the school level examinations **Bharatnatyam Prarambhik, Madhyama and Padvika** from **Tilak Maharashtra Vidyapeeth**
- Awarded a **diploma** from the **Akhil Bharatiya Gandharva Mahavidyalaya** for completing the **Praveshika Poorna** examination in **Bharatnatyam and Carnatic Music** (2009 - 2014)
- **Graduated** upon completing all terms of the **ABACUS Mental Arithmetic Program** (2008)
- **CovEd India Initiative** - Mentored and supported a student to enable him to handle college, coaching and personal stress during the COVID-19 pandemic crisis (2020)
- Assisted the **Angel Xpress Foundation (AXF)**, taught daily lessons in **Mathematics, English**, guiding over **40 children** from local schools to enable a better future for them (Summer 2019)
- Volunteered with the **Om Creations Trust** to help build creative skills such as art, craft and cooking, for the developmentally challenged (part of the Interact Club) (2015-2016)
- Acted in a key-role in a stage play directed by **Divya Palat**, performed in the **National Centre for Performing Arts (NCPA)**, as part of a summer fiesta (Summer 2014)