Bhavik Suthar | **170100057**
Mechanical Engineering | **B.Tech.**
Indian Institute of Technology, Bombay | **Gender: Male**
DOB: 24-04-2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	null
Intermediate	RBSE	Saint Meera Sr. Sec. School, Shivganj	2016	91.20%
Matriculation	RBSE	Govt. Sr. Sec. School, Gudha Balotan	2014	90.00%

SCHOLASTIC ACHIEVEMENTS

- Accomplished **AP** grade for exceptional performance in **Solid Mechanics** (4/156 students) course 2018
- Honored with the **Institute Technical Special Mention Award** 2020
- Secured an **AIR 1272** in **JEE Advanced** and **99.8** percentile in **JEE Mains** out of **1.2 Million candidates** 2017
- Awarded by District Superintendent of Police for achieving **1st rank** in the district in 12th board examination 2016
- Achieved **3rd rank** in Division Level Science Quiz Competition 2014
- Awarded **certificate of merit** by **District Collector** for performing well in 10th board examination 2014
- Pursuing a **minor** degree in **Computer Science and Engineering**

WORK-EXPERIENCE

Mars Rover Team | IIT Bombay [Apr'18-Present]

A 3-tier cross functional team of 35+ students to build an interplanetary rover prototype for University Rover Challenge (URC), an international extra-terrestrial robotics competition with 90+ participating teams held at Utah, USA

Achievments: Overall **4th** Position in IRDC 2020 | **1st** position in Critical Design Review in IRC 2019 | **20th** position in System Acceptance Review in URC 2019 | Secured overall **31st** position in URC 2018

Core-Team Member	• **Leading** the subsystem heads and **reviewing** new designs of the rover subsystems • **Designed** an active fluid-pump channels **heating system** of the rover in **IRDC** competition
Subsystem Head (Suspension) [2019-20]	• Mentored and guided 2 **sophomores** from brainstorming to manufacturing of suspension • **Improved** performance of the Mars Rover by **enhancing** the stability, slope and obstacle climbing capacity of suspension from previous design with-in the constraint • **Represented** team in different tech expos and showcased rover prototype in **UG Freshman Orientation** and **Tech & RnD Expo** - IITB Alumni day (SARC)
Junior Design Engineer [2018-19]	• Enhanced the **performance** of the rocker-bogie design by **redesigning** rover suspension • Performed **calculation** of the suspension members and simulated it's kinematics in the **MSC Adams** • Analyzed the design of suspension by performing **Static Structure Analysis** on ANSYS WORKBENCH and achieved **weight reduction** through iterative modelling • Acquired hands-on experience of the **fabrication and assembly** of the rover

Lear Corporation | *IEC Seating* [Apr'20-Jun'20]

Worked on the project to develop a standard excel-based calculator to determine the torsion rod life cycle

- Performed a **literature review** of various fatigue analysis methodologies and criteria for life cycle prediction
- Developed the standard **excel based calculator** to predict the fatigue life of the torsion bar based upon the input
- **Analyzed** the torsion rod and **loading condition** to determine the **mean and alternative** component of stress
- **Validated** the expected result by performing the fatigue analysis in the **ANSYS WORKBENCH**

TECHNICAL-PROJECTS

Ornithopter | Summer Undergraduate Research Program IIT Bombay [May'19-Jun'19]

Project Under the Prof. Arindrajit Chowdhury

- Worked with a team of **6 members** dedicated for **fabricating** of an Ornithopter of wings spanned 3 meter
- Rebuilt the **CAD design** to accommodate the necessary modifications for smooth fabrication
- Designed and built a **testing platform** to measure **lift and thrust** generated during flapping motion
- Supervised the **manufacturing and assembly** of the individual parts to construct the master assembly

Institute Technical Summer Project - IIT Bombay [May'18-Jun'18]

Stone Paper Scissor Champion

- Developed a computer program which can beat a human at the game of Stone-Paper-Scissor by predicting the opponents moves using **Image Processing**

- Implemented supervised classification **machine learning model** to train the dataset
- Used the **Convolutional Neural Network** to **train and test** our model with the use of Keras framework

Disassembly Project| Guided by Prof. Parag Bhargava [Sept'18-Oct'18]

Course Project under Metallurgical Engineering and Material Science Department

- Identified and **Investigated** the material, function and working principle of different parts of a **Cathode-Tube TV**
- Determined and **learnt** about **manufacturing processes** involved in the production of components and **researched** about the mechanical and chemical properties of the materials
- **Presented** every detail and the material properties of different parts to a batch of **150+** students

XLR8 | Electronics and Robotics Club, IIT Bombay [Aug'17]

- Constructed a **bot** to overcome obstacle-ridden path and completed the competition task
- Implemented the **electrical and mechanical** part of a bot using differential steering mechanism
- Incorporated a Bluetooth module **HC-05** and facilitated the use of an L293D motor driver

POSITIONS OF RESPONSIBILITY

Coordinator – Media & Publicity| Techfest-IITB [Jul '18-Dec'18]

Asia's largest college technical festival | footfall of 1.75 lakhs+| 500+ universities

- **Executed and managed** various events, i.e. Science & tech competitions, social initiatives
- Coordinated with **100+ College Ambassadors** across India, to conduct various events, competitions and workshops
- **Spearheaded** a team of **10+ organizers** to increase the outreach of events conducted by Techfest

Mentor at XLR8 | Electronics and Robotics Club-IITB [Aug'18-Sept'18]

- **Mentored** and **guided** a team in completion of their remote-controlled car for the XLR8 competition
- **Helped** them to **understand** the functions of the various electrical components and mechanical aspects of bot

TECHNICAL-SKILLS

Software	SolidWorks, ANSYS, AutoCAD, Fusion360, MSC ADAMS, Android Studio
Programming Language	Python, C++, OpenCV, Arduino

RELEVANT COURSES

Mechanical Engineering	*Robotics, Computational Structural Dynamics*, MEMS - Design, Fabrication, and Characterization, Machine Design*, Industrial Engineering and Operations Research I ,Heat Transfer, Solid Mechanics, Kinematics and Dynamics of Machines, Manufacturing Processes, Applied Thermodynamics, Fluid Mechanics, Microprocessors and Automatic Control*
Computer Science	*Data Structures and Algorithms, Introduction to Machine Learning, Operating System, Computer Programming and Utilization, Computer Network**
Others	*Introduction to Numerical Analysis, Calculus, Linear Algebra, Ordinary Differential Equations, Operations Analysis, Environmental Studies: Science and Engineering*

**To be completed by November 2020*

EXTRA-CURRICULAR ACTIVITIES

Social Service [2017-'18]

- Volunteered in food donation campaign under **Abhyuday-IITB** in collaboration with The **Robin Hood Army,** interacted with children aged 6-10 years by holding a drawing competition
- Volunteered in **Masti Ki Paathshala** session arranged by **Abhyuday-IITB** to familiarize student (*class 5th to 7th*) of ASHA NGO with some basic science concepts followed by some fun experiments and activities

Workshops and Sports

- Successfully completed one-year training in **Yoga** under the NSO program [2017-18]
- Participated and completed **Machine Learning** and **Python** boot camps organized by Career Cell division of the Undergraduate Academic Council, IIT Bombay [Jun'18]
- Attended the workshop on **android development** conducted by **WnCC** club, IIT Bombay [2017]