Bhavik Suthar | **170100057**
Mechanical Engineering | **UG Third Year (B.Tech.)**
Indian Institute of Technology Bombay | **Male**
DOB: 24/04/2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	9.23
Intermediate/+2	RBSE	Saint Meera Sr. Sec. School, Shivganj	2016	91.20
Matriculation	RBSE	Govt. Sr. Sec. School, Gudha Balotan	2014	90.00

Pursuing a minor in **Computer Science and Engineering**

Scholastic Achievements

- Secured **All India Rank 1272** in JEE Advanced out of **0.15 Million** students [2017]
- Achieved **All India Rank 2388** in JEE main out of **1.2 Million** students [2017]
- Secured **AP** grade for exceptional performance in **Solid Mechanics** (4/156 students) course [2018]
- Awarded by District Superintendent of Police for achieving **1st rank** in the district in 12th board [2016]
- Achieved **3rd rank** in Division Level Science Quiz Competition 2014 [2014]
- Awarded certificate of merit by **District Collector** for performing well in class X [2014]

Technical-Projects

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

Subsystem Head – Suspension system of the Rover

- Member of a diverse team of **20 students,** developing working prototype of a mars rover for participation in an international robotic competition, **URC** held annually in the USA
- Devised a passive **Rocker Bogie suspension** considering weight, cost, strength and manufacturing process
- Working on a new design of **suspension** to enhance the performance of the previous rocker-bogie design
- Performed **calculation** for suspension members and simulated its kinematics in **ADAMS**
- Analyzing the design of suspension by performing **Static Structure Analysis** on ANSYS WORKBENCH using the method of Finite Element Analysis
- Acquired hands-on experience of the **fabrication and assembly** of the rover components

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

Project Under Prof. Arindrajit Chowdhury

- Worked with a team of **6 members** dedicated for fabricating of an Ornithopter, whose wings spanned 3m
- Rebuilt the **CAD design** to accommodate the necessary modifications for smooth fabrication
- Supervised the **manufacturing and assembly** of the individual parts to construct the master assembly
- Incorporated wing **twisting mechanism** along with wing **flapping mechanism** to generate thrust
- Designed and fabricated **testing platform** to measure **lift and thrust** generated by flapping motion

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**
- Detect the **hand gestures** of the opponent using background subtraction feature in OpenCV
- Implemented supervised classification **machine learning model** to train our 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 different parts of a **cathode tube television** and disassembled it into 12 components
- Investigated the material, function and working principle of every element
- Determined and learnt about **manufacturing processes** involved in the production of components and researched about the mechanical and chemical properties of the materials
- Illustrated every detail and presented the material properties to a batch of **150+** students

XLR8 | Remote controlled bot making competition [Aug'17]

Electronics and Robotics Club

- 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
- Utilized **AT Tiny 2313** (Integrated Circuit) for the functioning of the bot
- 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, in order to conduct various events, competitions and workshops in their respective colleges
- Leading a team of **10+ organisers** to increase the outreach of events conducted by Techfest

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

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

Technical-Skills

Software	SolidWorks, ANSYS, AutoCAD, Fusion360, MSC ADAMS, Android Studio
Programming Language	Python, C++/C
Workshop Skill	Lathe Working, Shaping, Fitting and Wood Working
Operating System	Windows, Android, Linux

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]

Courses Undertaken

Relevant Courses	Thermodynamics, Solid Mechanics, Fluid Mechanics, Engineering Graphics & Drawing, Engineering Metallurgy, Manufacturing Process, Microprocessor and Automatic Control*, Heat Transfer*, MEMS - Design, Fabrication, and Characterisation*
Mathematics and Physics Courses	Calculus, Linear Algebra, Ordinary Differential Equations, Introduction to Numerical Analysis, Basics of Electricity and Magnetism, Quantum Physics and Applications
Computer Science Courses	Computer Programming and Utilization, Data Structures & Algorithms, Operating System, Deep learning – Theory and Practice*
Miscellaneous Courses	Economics, Biology, Organic & Inorganic Chemistry, Psychology*

**To be completed by November 2019*