Shashank Inamdar | **190100108**
Mechanical Engineering | **B.Tech.**
Indian Institute of Technology, Bombay | **Gender: Male**
DOB: 04-01-2002

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	
Intermediate	Maharashtra Board	PACE Junior Science College	2019	91.07%
Matriculation	CBSE	DAV International School,Kharghar	2017	96.60%

Pursuing a **Minor** in Department of **Electrical Engineering, IIT Bombay (CPI = 9)**

Scholastic Achievements

- Secured an **All India Rank** of **7960** in **JEE Advanced** out of **0.2 million** candidates [2019]
- Secured a percentile of **98.53** in **JEE Mains** out of **1.1 million** candidates [2019]
- Secured percentile of **99.713** in **MHT-CET (Maharashtra Common Entrance)** [2019]
- Finalist in **National Geography Quiz** held in **Kota** [2014]

Key Projects and Technical Activities

Junior Propulsion Engineer | Hyperloop IIT Bombay [Feb 2020- present]

A student technical team developing a working hyperloop pod, aims to be in par with European teams

- Voted **best paper** in the Hyperloop Symposium by **Hard Tech Fund** for paper on **Design of LIM**
- Presented the **Cold Gas Thrusters** in front of the Jury of **European Hyperloop Week, 2021**
- Finalist (1 out of 5) in **Desert Hyperloop** competition of **Arizona State University**
- Identified the **best motor-motor controller pair** with high Power-to-Weight ratio(>8kW/kg)
- Designing a **Linear Induction Motor** system that produces lift as well as thrust at a large range of speeds and simulating the **LIM** in **COMSOL** with varying thrust to optimize thrust production
- Designing mounting and transmission for the near-vacuum pod for optimal space stabilization

Compressible Fluid Dynamics | Summer Project [May 2021- present]

Prof. Balchandra Puranik, Mechanical Engineering Department

- Working on **shock boundary layer** interaction which is important part of **supersonic** as well as **hypersonic vehicles** following guidelines in **Knights Numerical Methods of Compressible Flow**
- Employing **SU2** for computational purposes, **Gmesh** for meshing and **Paraview** for visualisation as the other softwares for the simulation workflow and obtaining results in all physical variables

Bluetooth Controlled Car| Electronics and Robotics Club [Aug 2019]

XLR8, Biggest Technical Competition for Freshmen

- Assembled a **Bluetooth Controlled Four-Wheeled Bot** with on-Board power supply capable of negotiating the obstacles in its path and maneuvering through closed tunnels and inclines
- Designed the circuit using IC L293D, AT Tiny and IC 7805 and controlled the bot via mobile app

Circuit Simulation Using Verilog | Course Project [May 2021]

Prof. Vivek Agarwal, Digital Electronics, Electrical Engineering Department

- Learnt basic **Verilog** and worked collectively as team implementing the given problem statement
- Simulated a circuit to detect **duty ratio** of a given signal and to synthesize a signal given duty ratio
- Figured the working of **debouncing circuits** and its implementation of single pulse generation

Temperature Control using Schmitt Trigger | Course Project [April 2021]

Prof. Dipanshu Bansal, Mechanical Measurement, Mechanical Engineering Department

- Using **Schmitt Trigger** in the working of temperature control with the help of **Op Amps**
- Uses the concept of **hysteresis loop** to remove noises and converting it into a second order differential equation in terms of temperature and resistance and found errors, corresponding time constants, range, sensitivity, span along with its various applications.

Casting Simulation | Course Project [April 2021]

Prof. Pradeep Dixit, Manufacturing Process I , Mechanical Engineering Department

- Designed a **3-dimensional CAD** models using **Solidworks** for a geometric figure in a team of four
- Simulated the casting process for the models using **E-foundry** (an online software) to identify **hotspots** and made necessary changes accordingly to **minimize the hotspot regions**'
- Designed a **top riser** to remove the hotspots and ensured a sound casting for the CAD models
- Verified the simulation results using **Caine's Method** and **Modulus Method** to check for defects

von-Karman Gabrielli Diagram | Course Project [March 2021]

Prof. Kowsik Bodi, Aircraft Propulsion, Aerospace Engineering Department

- Diagram comparing the efficiency of transportation methods by plotting **specific tractive forces/ specific resistance** against **velocity** for extensive form of transportation, tracking improvements
- Extracted points using **Web Plot Digitizer** from a **1950** diagram and recreated the improved diagram over the years with information collected over the internet and made an extensive report on all the available parameters with graphs creating the new **von-Karman Gabrielli Diagram**

Internship

Online tutor (Organic Chemistry) | Baudhayan Career Institute [Aug 2020-present]

Startup formed by Alumni (working in Denmark and Japan) and seniors at IITB for social welfare

- Providing guidance and motivation to **underprivileged students** of 11th and 12th from the most backward students of Bihar and preparing them for **JEE (11th/12th)**and other competitive exams

Position of Responsibilty

Competitions Manager | Radiance, IIT Bombay [June 2021-present]

The Annual Research Symposium of Mechanical Engineering Department with 25+ competition/events

- Part of the **14 member** core team working to revamp and relaunch the **research symposium** of the Mechanical Department and organising **pan-India events** throughout the year till March 2022
- Structuring and conceptualizing problem statement and judging criteria for case study, quizzes and functioning as the first point of contact for industries for smooth conduction of workshops
- A team lead by 3 members in organising, initiating, structuring and working with professors of Mechanical Department for the flagship event of Radiance,**Vaigyaniki**,research paper competition

Competition Coordinator | Abhyuday, IIT Bombay [July 2020-Jan 2021]

Social Body of IIT Bombay with the vision to channelize youth towards social initiates

- Supported the conceptualisation, organisation and implementation of various competitions across the country which includes '**Art Against Stigma**' with support from **UNICEF India**
- Ideated a nation-wide hackathon targeting **15k+** audience to garner solutions for socially relevant problems and assisted in executing **Pan-India** Social Entrepreneurship Challenge Action Plan

Technical Proficiency

Programming Languages: C,C++,Python,HTML, MATLAB, Unity 3D, Octave, Scratch
Softwares: COMSOL, SU2,Gmesh, Paraview, AutoCAD, Solidworks, CNC, Camotics,Filmora, AfterEffects

Courses Undertaken

Core Courses	Fluid Mechanics, Solid Mechanics, Thermodynamics, Mechanical Measurements, Microprocessor and Automatic Controls*,Manufacturing Process, Structural Mechanics, Heat Transfer*, Magnetohydrodynamics and its Application*
Other Courses	Aircraft Propulsion, Nuclear Reactor Theory*, Analog Circuits, Digital Electronics, Power Electronics*, Numerical Analysis,

(* to be completed by Dec 2021)

Extra-Curricular Activites

- Completed a year-long training in **athletics** under the National Sports Association
- Athletics Captain of ZEUS during Freshiesta, freshmen sports