Bhavina Rajesh Gajghate
Chemical Engineering
Indian Institute of Technology Bombay

210020048
B.Tech.
Gender: Female
DOB: 19/05/2003

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	

Auxiliary Degree: Pursuing a **Minor** in the department of **Industrial Design Centre**, IIT Bombay

INTERNSHIP

Improving Mechanical Properties of Solid Rocket Propellants *(May '23 - July '23)*
Guide: Dr. Harmeet Singh Dalwani, Scientist 'D' | High Energy Materials Research Laboratory, DRDO, Govt. of India
Awarded a **Letter of Recommendation** for exemplary work done on the live project during the internship duration
- *Aim:* ○ Researched feasibility of utilising anionic HTPB over conventional FR-HTPB in binders via analytical methods
- *Approach:* ○ Processed **15+** samples of anionic HTPB diagnosed by **Hydrogen Nuclear Magnetic Resonance** (1_H NMR) **spectroscopy** to accurately determine molecular weight & isomeric content via the method of peak integration
  ○ Evaluated comparatively on multiple parameters such as **PDI** (polydispersity index) and isomeric **vinyl content**
  ○ Conducted comparative curing kinetics experiment by **FT-IR spectroscopy** of FR and anionic HTPB with TDI
- *Impact:* ○ Established a **new reference point** to confirm the existing **molecular weight** of anionic HTPB polymer
  ○ Determined that the **curing time** of anionic HTPB is comparable to FR-HTPB both requiring approximately 1 day

KEY PROJECTS

Enhancing the efficiency of steam condensers using turbulent flow techniques *(Jun '21 - Jun '22)*
Guide: Prof. P. Sunthar | Chemical Engineering Department, IIT Bombay | Course Project
- Collaborated in a dynamic team of **8** to improve **heat transfer rate** through an innovative thermal solution
- Discovered the problem of **inadequate** convectional heat transfer rates in the **laminar flow** through tubes
- Achieved a significant **27.5%** efficiency improvement by integrating **rings** and **fins**, presenting a pioneering solution

Manch 6.0 | Financial Project *(Jan '23 - Apr '23)*
Guide: Beena Shetty | Deutsche Bank | Gender Cell, IIT Bombay
- Conducted a case study on the likelihood of a **subprime-type mortgage crisis** occurring in the Indian subcontinent
- Analysed the **causes** and **consequences** of the **Global Financial crisis, 2008** that happened in the USA
- Attended **20+** hours of training sessions conducted by Deutsche Bank on **finance** and **soft skills development**

Real Time Drowsiness Detection System *(May '23 - Jul '23)*
Seasons of Code | Web and Coding Club, IIT Bombay
- Employed a MobileNetV2-based CNN model in **TensorFlow** and **Keras** to classify eye states as open or closed
- Achieved **99%** accuracy on the validation (test) set by training the CNN model on the comprehensive **MRL dataset**
- Utilized **OpenCV's HaarCascade** algorithm for real-time face and eye detection thereby tracking the drowsiness
- Integrated the trained CNN model with the **eye-tracking system** to continuously monitor and predict the situation

POSITIONS OF RESPONSIBILITY

Project Manager | Enactus, IIT Bombay *(May '23 - Present)*
International non-profit organization promoting social-entrepreneurship | 70K+ students | 1,700+ colleges
- Leading the **Mumbai Project** with a team of **4+** associates to solve the challenges faced by the urban population
- Engaging in a collaborative effort with **CTARA, IIT Bombay** to execute a business model for **ragi products**

D-AMP Mentor | Department Academic Mentorship Programme (SMP), IIT Bombay *(May '23 - Present)*
Part of an institute-wide team of 43 mentors selected post rigorous screening & strong peer reviews
- Appointed as the mentor to **4** students ensuring their holistic development & guiding them in their academic endeavours
- Responsible for timely updating and improvement of the D-AMP blogs catering to over 500+ students

Web Secretary | Chemical Engineering Association, IIT Bombay *(May '22 - Apr '23)*
Part of an 11 membered department council responsible for managing 20+ events with an overall budget of 0.4 Million
- Revamped the ChEA blog to reach a **3K+** audience & uploaded **60+** blogs aiding intern preparation of **400+** students
- Ideated and created Freshers' Introduction Video amassing **22K+** views for the official **YouTube** channel of ChEA

ACCOLADES AND EXTRACURRICULARS

Accolades	• Scored **96.4%** in CBSE (Central Board of Secondary Education) Examination • Secured **93.67%** in HSC (Higher Secondary Certificate) Examination	('19) ('21)
Certificates	• **Machine Learning Specialization** | Andrew NG | Stanford University | Coursera	('23)
Social	• Volunteered for **Global Cancer Concern India's** national programme and helped with **relief efforts** of cancer patients	('14)
Sports	• Bagged **2 Gold** medals in Skating by **Mumbai Speed Skating Cup** (quads) • Won **Gold** medal in Throwball Tournament by **Mumbai School Sports Association**	('16) ('15)
Cultural	• Declared **winner** of Envent - Power Suit Making Competition by **Energy Club**, IITB • Awarded **2nd position** in Creative Writing Competition organized by **Literati**, IITB	('22) ('22)