



Gayatri Shailendra Moghe  
Chemical Engineering  
Indian Institute of Technology Bombay

22B2451  
B.Tech.  
Gender: Female  
DOB: 13/06/2004

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2026	

Pursuing a **Minor** degree from the department of **Computer Science and Engineering**, IIT Bombay

## SCHOLASTIC ACHIEVEMENTS

- Secured **AA** grade in the department core courses **Chemical Reaction Engineering** (CL 208) **Chemical Engineering Thermodynamics** (CL 207) & **Chemical Engineering Lab 1** (CL 232) [2024]
- Awarded a **change of branch (top 14%)** out of **1300+** students based on exemplary academic performance[2023]
- Secured an all India percentile of **99.52** in JEE Main examination among **1.1 million** candidates [2022]

## PROJECTS UNDERTAKEN

**Direct Air Capture** | Team ChemEcube || Guide: Prof. Mahesh S Tirumkudulu [Feb'24-Present]

*An 8-member team creating sustainable solutions to real world chemical engineering challenges*

- Contested with **38 international universities** in the **AIChE** competition to create a **1-ft cube** mini plant
- Engineering a **scalable model** to capture **CO<sub>2</sub>** from ambient air at **400 ppm** and isolate it in its pure form
- Utilizing **Zeolite 13X** and its **Fe** modifications to get adsorption capacity of **0.4 mmol CO<sub>2</sub>/gm** of sorbent

**Bombardier Beetle's Defense Mechanism** | Course Project || Guide: Prof. Sonali Das [April'24]

- Investigated** specialized compartments of the beetle identifying chemical reactions that produce hot toxic spray
- Formulated and solved systems of ODEs using **Python** to model the beetle's defense mechanism, analysing the impact of varying inlet and outlet radii on varying reaction rates and product concentrations in the reaction chamber

**Stock price prediction model** | WiDS || Analytics Club, IIT Bombay [Dec'23-Jan'24]

- Processed data from **Quandl**, implemented **K-Nearest Neighbors (KNN)** algorithm to predict stock prices
- Conducted hyperparameter tuning using **GridSearchCV** visualized results to compare actual vs predicted values

## PROFESSIONAL EXPERIENCE

**Analysing Combustion Instability in Solid Rocket Propulsion** [May'24 - Jul'24]

Guide: Mr. Rohit, Scientist 'F' | HEMRL, DRDO, Govt. of India

- Conducted in-depth literature review on solid rocket propulsion technology, focusing on the mechanisms of **combustion instability** and performed **experimental** analysis on a **T-burner** apparatus to study instability
- Applied **Fast Fourier Transform** and analyzed pressure-time data using **MATLAB** to determine growth and decay constants as well as the characteristic **Pressure Coupled Response function (Rpc)** of solid propellants

**GHG Emissions Analyst** | Prachi Services Inc [Dec'23 - Jan'24]

- Researched and analysed about types of **greenhouse gas emissions** and their **scopewise inventorization**
- Developed an **Excel** based program to quantify the GHG emissions and calculate the **GHG credit score**

**Educational Content Creator** | Ankur Pratishthan [Jul'23 - Aug'23]

- Researched and analysed **learning methods** to promote effective scientific learning for underprivileged students
- Developed **modules** with activities for **3rd to 8th** class students to create learning based on practical application

## POSITIONS OF RESPONSIBILITY

**Competitions Manager** | Azeotropy | IIT Bombay [Jul'24 - Present]

*India's largest intercollegiate Chemical Engineering symposium with 11K+ footfall from 350+ colleges*

- One of the **14** core members of a **3 tier** team responsible for conceptualizing and executing the Azeotropy symposium
- Ideating new competitions while restructuring existing ones targeting **10% YoY** growth in national outreach

**Business Team Member** | Mars Rover Team | IIT Bombay [Sep'23 - May'24]

*Team of 60+ members developing Mars Rover prototypes to participate in International Competitions*

- Executed **awareness** and **publicity** campaigns for the team in events including Abhyuday outreach program, E-Summit, Alumination, Azeotropy, Zephyr and Aavhan with a cumulative footfall of **1 lakh+** attendees
- Drafted **sponsorship proposal** for logistics support for the team to participate in the University Rover Challenge

## EXTRA CURRICULAR ACTIVITIES

Cultural	<ul style="list-style-type: none"><li>Passed <b>level 4</b> examination of <b>Classical Singing</b> conducted by Gandharva Mahavidyalaya</li><li>Bagged <b>1st</b> position in singing in Cultural Championship conducted by NCC IIT Bombay</li></ul>
Miscellaneous	<ul style="list-style-type: none"><li><b>Technical Skills:</b> C, C++, Python, MS Office, SolidWorks, Ansys, L<sup>A</sup>T<sub>E</sub>X, MATLAB</li><li>Achieved <b>B Certificate</b> in National Cadet Corps, completing 1-year Military Training</li><li>Volunteered for <b>Powai lake cleanup drive</b> conducted by NCC IIT Bombay</li><li>Achieved rank <b>9</b> in Pre-Secondary Scholarship Examination by Maharashtra Government</li></ul>