



Samagra jain  
Chemical Engineering  
Indian Institute of Technology Bombay

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B.Tech.  
Gender: Male  
DOB: 10/27/2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	██████
Intermediate	MPBSE	Presidency H.S. School	2020	95.80%
Matriculation	CBSE	Vandana Convent School	2018	96.40%

Pursuing a **Minor degree** in **Management** from Shailesh J. Mehta School of Management, IIT Bombay

## SCHOLASTIC ACHIEVEMENTS

- Achieved **99.80 percentile** in Joint Entrance Exam Mains among **1.1 Million+** candidates (2020)
- Secured **97.54 percentile** in Joint Entrance Exam Advanced among **0.15 Million+** candidates (2020)
- Achieved district rank **1** and state rank **12** in 12th Madhya Pradesh Board of Secondary Education (2020)

## PROFESSIONAL EXPERIENCE

### Vocational Trainee | National Fertilizers Limited

(Nov'21-Dec'21)

India's largest government corporation in Fertilizer Sector with a turnover of over **Rs. 75 billion**

- Acquired hands-on-experience in ammonia production by controlling all variables & units on a **virtual simulator**
- Undergone a **month** long training program at National Fertilizers Limited Vijaypur Ammonia Production plant
- Studied the processes of Desulphurization, Reformation, Methanation, Ammonia Synthesis & Ammonia Storage
- Attended sessions on **Energy Saving** techniques and **Safety Measures** required to run a Fertilizer plant

### Strategy and Process Excellence Intern | Yaantra

(May'22-Jun'22)

India's leader in Recommerce & daughter company of Flipkart

- Identified and eliminated the **process gaps** resulting in **30%** reduction of End-to-End **TAT** for order completion
- Analysed the selling pattern of consumers and accentuated the most and least sold smartphones to the finance team
- Identified and highlighted the **Technological automation** required for **operations optimisation**
- Curated an exclusive report for **Flipkart** capturing **customer** and **company** journey in re-commerce of phones

## POSITIONS OF RESPONSIBILITY

### Department Academic Mentor

(May'22-Present)

Student Mentorship Program | IIT Bombay

- Mentoring **6** chemical engineering sophomores catering to their academic needs and co-curricular endeavors
- Selected out of **98** applicants in a team of **40** members for student mentorship program to build a support system for **160+** second year students based on rigorous interview, interpersonal skills and positive peer reviews
- Responsible for organising and managing **10+** events and help sessions targeted towards **250+** students
- Actively involved in bridging the student-faculty gap and improving the academic experience of students

### NEC Mentor

(Oct'21-Feb'22)

The Entrepreneurship Cell | IIT Bombay

- Curated tasks for basic and advanced tracks in a structured manner in National Entrepreneurship Challenge, a pan India initiative to develop sustainable Entrepreneurship Cells in **700+** institutions in **90+** cities in India
- Mentored **40 colleges**, providing them with support and guidance to help them grow their Entrepreneurship cells
- Ideated and hosted the NEC finals, which saw the participation of **20 colleges** in **15+** cities of the country

### Technical Mentor: Summer of Science

(May'22-July'22)

Maths & Physics Club | IIT Bombay

- Guided **4** second-year students for reading project in the field of **Game Theory & Mechanism Design**
- Compiled resources for a multi-dimensional learning experience and introduce the various opportunities available in **economics**, politics, **psychology**, evolutionary biology, **operations** and business corresponding to the field
- Addressed their doubts and queries by regularly engaging with them; reviewed their mid-term and final reports

### Coordinator, Horizons

(May'21-Mar'22)

Mood Indigo, IIT Bombay | 51st Edition

Asia's Largest College Cultural Festival | 1,00,000+ viewership | 3+ hours viewing time

- Invited **10+** artists from **3+** countries to exhibit international performances at the 51st edition of Mood Indigo
- Coordinated with **35+** Indian athletes from cricket, kabaddi and table tennis to showcase events

## KEY PROJECTS

**Enhancement of Exhaustive silencer in Bike** | Course Project: Heat Transfer (Jan'22-Apr'22)

Guide: Prof. P Sunthar & Prof. Venkat Gundabala | Department of Chemical Engineering | IIT Bombay

- Worked in an **8** membered team to come up with an optimal thermal solution to significantly reduce the Body temperature of bike silencer by introducing **dimple** patterns and changing material to ceramic coated stainless-steel
- Reviewed various research papers to understand effect of structure and material on heat transfer in silencers

**Flow pattern in a draining tank** | Course Project: Process Fluid mechanics (Jan'22-Apr'22)

Guide: Prof. Devang V. Khakhar | Department of Chemical Engineering | IIT Bombay

- Studied the effects of flow of a fluid through the exit of a draining tank under laminar and turbulent conditions
- Created a two-dimensional mesh of the exit using **Gmsh** and simulated the flow through it using **Openfoam**
- Implemented the Large Eddy Simulation model and **pisoFoam** solver to simulate the turbulent flow using Reynolds Averaged Simulation and **icoFoam** solver to simulate the laminar flow through the exit of the draining tank

**Game Theory** (May'21-Jul'21)

Summer of Science | Maths & Physics Club | IIT Bombay

- Covered introductory topics from static and dynamic games and related topics from the field of game theory
- Researched on recent revival of Game Theory and its multifarious utilities in cybercommerce and allied areas
- Acquired fundamental knowledge about the consequences of the Theory and grasped central concepts, along with their potential to provide insights to a range of interesting problems with counter-intuitive results

**Needsjet** | Course Project: Introduction to Entrepreneurship (Jul'21-Nov'21)

Guide: Prof. Anu Narasimhan and Prof. Rajen Jaswa | DSSE | IIT Bombay

- Developed a detailed **Business Model Canvas(BMC)** focusing on value proposition, target market, business opportunity, income channels and **financial projections** along with the development of the platform
- Brainstormed along a team of **7** and came up with an idea of creating an **hyper local e-commerce** platform dealing with the problem of late/inaccessible delivery in some **second tier** cities of the country

**Stock Market Analysis** (May'22- Present)

Summer of Science | Maths & Physics Club | IIT Bombay

- Learned the necessity of Investments and functionality of Stock Market and Financial Institutions
- Researched about Corporate Actions, Market Events, Financial statements & Ratios, and Balance Sheet
- Covered the Technical Analysis: Chart Patterns, Dow's Theory, Indicators, Trading psychology, Risk Management

## KEY COURSES UNDERTAKEN

CORE COURSES	MATHEMATICS AND PHYSICS	MISCELLANEOUS
Thermodynamics Heat Transfer Process Fluid Mechanics Introduction to Data Analysis Numerical Analysis Transport Phenomena Computational Methods Lab Chemical Engineering Lab I Chemical Engineering Lab II* Chemical Reaction Engineering* Mass Transfer* Solid Mechanics*	Calculus Linear Algebra Differential Equations I Differential Equations II Quantum Physics & Application Basics of Electricity & Magnetism	<b>Operations Management</b> <b>Finance Management*</b> Economics Psychology Engineering Graphics & Drawing Introduction to Entrepreneurship Biology Computer Programming & Utilization Computer Networks Physical Chemistry Organic & Inorganic Chemistry

(\*to be completed by Nov'22)

## TECHNICAL SKILLS

**Programming**

C/C++, HTML, R, MATLAB

**Softwares**

AutoCAD, ANSYS, MS Office, LATEX, Open Foam, Adobe Photoshop

## EXTRACURRICULAR ACTIVITIES

- Dedicated **80+** hours of social service as a volunteer of National Service Scheme (**NSS**), IIT Bombay (20'-21')
- Participated in the Virtual Stock Market workshops and competition organised by **E-Cell**, IIT Bombay (2021)
- Successfully completed the penultimate level of Universal Concept of Mental Arithmetic System (**UCMAS**).
- Received Certificate of Merit for 2 consecutive years in Science, Maths, English and General Knowledge Olympiad organised by SilverZone Foundation.
- Represented school team in **Basketball** Inter School Sports Competition in Vandana Convent School (2015)