



Aryan Manna
Chemical Engineering
Indian Institute of Technology Bombay

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B.Tech.
Gender: Male
DOB: 15/07/2004

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2026	
Intermediate	CBSE	Delhi Public School Rohini	2022	94.80%
Matriculation	CBSE	Delhi Public School Rohini	2020	97.00%

Pursuing a minor in **Centre for Machine Intelligence and Data Science** in IIT Bombay

SCHOLASTIC ACHIEVEMENTS

- Achieved **Rank 1295** and **fellowship** in stream SX in Kishore Vaigyanik Protsahan Yojana exam[2022]
- Secured **International Rank 34** and **99.91 percentile** in the SOF National Science Olympiad [2018]
- Secured **International Rank 42** in Science Olympiad Foundation International English Olympiad[2017]
- Secured **Zonal Rank 6** in 19th SOF NSO in Delhi Zone and **Certificate of Zonal Excellence** [2017]
- Ranked in the **top 1.5%** with a **98.7 percentile** in JEE Advanced, among 1.6 lakh candidates [2022]
- Ranked in the **top 0.2%** with a **99.8 percentile** among 1.16 million candidates in JEE Main [2022]

KEY PROJECTS

Engineering a Fluidised Bed Catalyst Regenerator | Guide: Prof. Sanjay Mahajani [May '24-present]

- Conducted **thorough research** and **meticulous analysis** to identify and compile **pertinent literature**
- Formulated **systems of equations** to find various entities regarding **fluidisation and regeneration**
- Operated **MATLAB, Python, Fusion 360 and Desmos** for various computational aspects of project

Mountain Cargo Challenge | Guide: Prof. Dinesh K. Sharma | MS101 Course Project [May 2023-June 2023]

- Contributed to build a robotic truck to **climb a thirty degree incline** and deliver payload of **300 grams**
- **Analysed dimensions** to accommodate payload and working parts, ensuring **vehicle's stability** on turns
- Manufactured the vehicle in budget under **INR 2000** and required **below 12 hours** of 3D printing time
- Utilised **Autodesk Fusion 360** for solid modelling and **CO2 laser** for precise laser cutting of parts needed

Modelling defence mechanism of Bombardier Beetle | Prof. S Das | Chemical Reaction Engineering [April '24]

- Thoroughly **studied the provided literature** about the defence mechanism of the bombardier beetle
- Used **Python** and its libraries(odeint, fsolve) to solve **equations formulated** and obtain **relevant data**
- Operated **MS Excel** to work on the overall data gathered so as to **generate the associated graphs**
- Conducted an analysis to conclude an Explosive Secretory Discharge take time around **0.1 seconds**

Modelling Peng-Robinson Equation of state | Guide: Prof. Abhijit Chatterjee | CL207 Course Quiz [Sep 2023]

- Employed C++ programming language to model the **Peng-Robinson equation of state** for Oxygen
- Also operated various online **graphing software** and **Microsoft Excel** to obtain necessary graphs
- **Calculated various entities** like vapour pressures, enthalpies, entropies, molar volumes etcetera

Analysing images of shapes | Guide: Prof. Vinay Kulkarni | DS203-Programming for Data Science [Sep 2023]

- Part of a **group of four** that worked on a **repository of 1183 images** of various shapes using Python
- **Clustered and Categorised** those images on the bases of shape and complexity (low, medium, high)
- Prepared presentation with respect to the **analysis conducted and algorithms used** on the repository

Smart Home Plant Care System | ENT606-Developing a Proof of Concept-Basic [Nov 2023]

- **Conceptualised startup** to address neglected potted plants with a cheap motorised drip irrigation system
- Conducted market and competitive analysis, positioning the product at **only 60% of competitors' costs**
- Procured **cheap yet reliable** equipment, balancing affordability and functionality of prototype effectively
- Part of **team of four** planning, executing, and prototyping the system, exploring further commercialization

TECHNICAL SKILLS

Computer Languages and Operating Systems	C++(on Windows, Linus, Cygwin), HTML, CSS, Python
Software Packages	Microsoft Office, Autodesk Fusion 360, LaserCAD

POSITIONS OF RESPONSIBILITY

Administrations Head | National Cadet Corps, IIT Bombay [July 2024-present]

- Spearheading a **30+ member, three-tier** council for the smooth conduction of **30+** events all year round
- Working in a team of **six**, leading **280 cadets** for the smooth functioning of the organisation as a whole
- Responsible for monitoring and utilisation of annual budget worth **INR 1.2 million** allocated to NCC IITB

Adventure Secretary | National Cadet Corps, IIT Bombay [July 2023-June 2024]

- Accountable for conduction of sports, trips and adventure-related activities for **200+ first-year cadets**
- Organised an institute trip to Harishchandragad, successfully coordinating activities for **over 100 tourists**
- Planned and executed NCC IIT Bombay's **40+** cadets' visit to **National Defence Academy** Khadakwasla

Cadet Under Officer | 2 Maharashtra Engineers Regiment [Aug 2024-present]

- Awarded the rank of **Under Officer** for appreciable dedication and devotion for the Organisation's benefit
- Responsible for effective communication amongst **Indian Army Officers** and **Institute Functionaries**
- **Developed** OLQs (Officer Like Qualities) in the cadets like decision making, discipline and punctuality

Sergeant | 2 Maharashtra Engineers Regiment [Aug 2023-Aug 2024]

- Conferred the **second-highest arm rank**, Sergeant based on a rigorous physical and mental assessment
- Booked venues, **coordinating** with sports secretaries, coaches, and Care Taking Officer for **200+ cadets**
- Involved in the appointment of **11 Lance Corporals** based on a 2-stage test designed on SSB Pattern

KEY COURSES UNDERTAKEN

Core courses	Introduction to Chemical Engineering, Material and Energy Balances, AI and Data Science, Chemical Engineering Thermodynamics, Process Fluid Mechanics, Economics, Chemical Engineering Lab. I, Chemical Reaction Engineering, Introduction to Numerical Analysis, Fundamentals of Heat and Mass Transfer, Introduction to Transport Phenomena, Developing a Proof of Concept-Basic, Physical Chemistry
Non-core courses	Computer Networks, Introduction to Management, Programming for Data Science, Makerspace

EXTRA-CURRICULAR & ACHIEVEMENTS

National Cadet Corps	<ul style="list-style-type: none">• Undergone military training in Combined Annual Training Camp(CATC-411) for 10 days.[June-July '23]• Completed rigorous physical and mental training for ten days in the Council Training Camp [July '23]• Performed Guard of Honour(A special salute with 7.62mm SLR Rifles) on Independence Day [Aug '23]• Completed 2 years of training and currently pursuing C-certificate in third year in National Cadet Corps
Sports	<ul style="list-style-type: none">• Participated in Crossy General Championship and was one of the best out of 50+ participants[Mar '23]• Performed various yogasanas in International Yoga Day celebrations in IIT Bombay [Jun '23', Jun '24']
Social Work	<ul style="list-style-type: none">• Participated in lake cleaning twice, and river cleaning done under Puneet Sagar Abhiyan[Apr-Sep '23]• Participated in Environment Day tree plantation by NCC, IITB and planted twenty saplings [June '24]• Voluntarily took part and donated blood at a blood donation drive conducted by NCC, IITB [Nov '23]
Cultural	<ul style="list-style-type: none">• Silver medallist in Laughter Riots conducted by Comedy Cons, comedy club of IIT Bombay [Feb '23]• Secured second position in Lok Rang inter-school competition, organised by DPS, RK Puram[Dec '16]• Awarded distinction by Pracheen Kala Kendra, Chandigarh in Vocal Classical music [Apr '14, Apr '15]• Performed in the dance and drama of NCC IIT Bombay contingent during CATC-411 [June-July '23]