



Sugandh Kumar  
Chemical Engineering  
Indian Institute of Technology Bombay

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B.Tech.  
Gender: Male  
DOB: 16/07/2006

Examination	University	Institute	Year	CPI / % Credits
Graduation	IIT Bombay	IIT Bombay	2028	9.24 Core: 66   Total: 66
Intermediate	CBSE	DAV Pub School Patna	2024	96.40%
Matriculation	CBSE	DAV Pub School Patna	2022	93.80%

Pursuing a minor degree in **Artificial Intelligence and Data Science** under C-MInDS Department at IIT Bombay

## SCHOLASTIC ACHIEVEMENTS

- Achieved **AA/AB grade** in **10 courses**, awarded to **top 10%** students for exceptional academic performance ['25]
- Ranked in the top **2.45%** among over **0.18 million+** candidates nationwide in the JEE Advanced examination ['24]
- Secured an overall percentile of **99.76** in IIT-JEE Mains, attempted by **1.4 million+** candidates nationwide ['24]
- Scored a perfect **100/100** in **Class XII CBSE Chemistry boards**, demonstrating exceptional proficiency ['24]

## KEY PROJECTS

### On-Chain Crowdfunding Platform | Seasons of Code 2025

(May '25 - Jul '25)

Web and Coding Club | Institute Technical Council | IIT Bombay

- Developed and launched a **Solidity smart contract** enabling fully secure, transparent decentralized crowdfunding
- Engineered an **on-chain protocol** using **Remix IDE** for pledging, refunding and withdrawal, ensuring robustness
- Deployed the contract to an **Ethereum testnet**, actively validating transactions and monitoring campaign states
- Gained hands-on experience in **blockchain architecture**, smart contract lifecycle and core principles of **DApps**

### Artificial Intelligence and Machine Learning | Summer of Science 2025

(May '25 - Jul '25)

Maths and Physics Club | Institute Technical Council | IIT Bombay

- Performed **EDA** on wine quality dataset using summary stats, missing checks, histograms, boxplots and correlations
- Assessed models with **MSE, R<sup>2</sup>, Accuracy, Precision, Recall, F1**, achieving up to **90% accuracy** on predictions
- Built and trained **machine learning models** like Linear Regression, Random Forest, SVR and Gradient Boosting
- Applied **data preprocessing** techniques including outlier removal and scaling via standardization/normalization

### Decentralized Voting System - Blockchain | Self Project

(May'25 - Jun'25)

Immutable and Transparent Decision-Making System for DAOs

- Developed a **Solidity smart contract** enabling users to easily create and manage proposals with multiple options
- Implemented secure **on-chain voting**, preventing double voting and accurately tracking votes in real-time for users
- Designed robust **winner determination** with tie-handling after the proposal deadlines for fully transparent results
- Utilized **Remix IDE** for deployment, rigorous testing and learning blockchain governance and decentralized systems

### Non-Fungible Token Marketplace | Self Project

(Jul'25 - Aug'25)

ERC-721 Standard for Digital Ownership

- Developed a fully decentralized **NFT** trading marketplace using Solidity smart contracts on the Ethereum blockchain
- Implemented secure functionalities to **mint, list, buy and track NFTs** seamlessly in real-time on applications
- Leveraged **OpenZeppelin ERC721** standards with **ReentrancyGuard** for security and ownership management
- Tested, debugged, and deployed the smart contract using Remix IDE with **JavaScript VM** and Ethereum testnets

### J.A.R.V.I.S - Just A Rather Very Intelligent System | Self Project

(Dec'24 - Jan'25)

- Successfully automated personal digital tasks using an **AI-powered** system capable of accurate text understanding
- Developed an **NLP-based** command classifier and feature extraction pipeline for high-accuracy intent recognition
- Trained a **machine learning model** to categorize the inputs: **send email, create list, set reminder** and more
- Engineered a **command-line interface (CLI)** for interactive testing, efficient debugging and system deployment

### Spotify Churn Dashboard - Data Visualization | Self Project

(Aug'25 - Sep'25)

- Built an **interactive Streamlit dashboard** to analyze churn patterns for **8,000+** Spotify users across demographics
- Engineered **dynamic filters and metrics** for effectively exploring churn by country, gender and subscription type
- Designed **visualizations and plots** such as bar charts and scatter plots clearly showing churn behavior patterns
- Performed data cleaning and preprocessing using **pandas, NumPy and Seaborn** for accurate churn analytics

POSITIONS OF RESPONSIBILITY

Teaching Assistant (CH111) | IIT Bombay (Sep '25 - Present)  
Chemistry - Prof. Shobhna Kapoor

- Selected as **Teaching Assistant**, a role open only to students with an **AA grade in CH111** and **CPI above 9.0**
- Mentoring a batch of **40** students in CH111 through interactive lectures and tutorials to strengthen understanding and problem-solving skills in key topics like **Schrödinger wave equation, quantum mechanics principles** etc
- Organizing assignments and records**, while supporting students in enhancing analytical skills and confidence

OTHER PROJECTS

Wi-Fi Controlled Functional Drone | Course Project (Jan '25 - Apr '25)  
Guide: Prof Joseph John, Prof PC Pandey | Course: Makerspace | IIT Bombay

- Collaborated in a team of **6** to **design, develop**, and **test** a fully functional **drone**, from **concept** to **flight testing**
- Utilized **AutoCAD** for detailed 3D modeling of all drone components and implemented **Arduino** and **ESP** modules, along with other essential technical devices, to program and precisely control the drone's fully autonomous flight
- Identified and resolved technical challenges related to **hardware integration** and **software calibration**, ensuring project milestones were consistently met on time, while demonstrating strong problem-solving and key adaptability

Business Analysis of an FMCG Company | Course Project (Oct'24 - Nov '24)  
Guide: Prof. Mayank Pareek | Course: SOM101 | IIT Bombay

- Conducted an in-depth **business analysis** of **Nestlé**, encompassing **SWOT** framework, organizational strategies, and both short-term and long-term strategic planning within a team of **10 members**, delivering actionable insights
- Delivered a comprehensive **class presentation** to **150 peers**, summarizing key findings & strategic recommendations

Gesture controlled WiFi Obstacle Bot | XLR8 (Aug '24)  
Electronics and Robotics Club | ITC | IIT Bombay

- Constructed a **Joystick controlled** bot in a team of **4** students to overcome obstacles in the shortest possible time
- Implemented the **Mechanical and Electrical** subsystems of the Joystick controlled bot using **L298N** and **Raspberry Pi Pico W** module and programmed differential steering mechanism in C++ using the **Pico SDK** in Arduino IDE

TECHNICAL SKILLS

Programming	Python, Java, C/C++, HTML, LaTeX, Git, Solidity , Arduino
Softwares	GitHub, Fusion360, Fracktory , LaserCAD , Microsoft Excel, easyEDA , MySQL
AI and ML	NumPy, Pandas, Matplotlib, Seaborn, Scikit-Learn, TensorFlow, OpenCV, NLP
IDE / Notebooks	VS Code, PyCharm, Jupyter Notebook, Google Colab, Remix IDE

RELEVANT COURSES UNDERTAKEN

Core	Chemistry, Material and Energy Balances, Chemical Engineering Thermodynamics*, Process Fluid Mechanics*, Colloid and Interfacial Engineering*
Mathematics , Physics and Labs	Calculus, Linear Algebra and Differential Equations, Introduction to Classical and Quantum Physics, Chemistry Lab and Physics Lab
Computer Science	Computer Programming and Utilization, AI and Data Science*, Programming for Data Science*
Miscellaneous	Introduction to Management, Makerspace, Economics*, Introduction to Design, Biology*

\* courses to be completed by December 2025

EXTRACURRICULAR ACTIVITIES

- Volunteered diligently for **80+ hours** as part of the **NOCS-01** course under Social Development of the **NSS** (2024)
- Collected, organized, and managed old and used clothes from residential societies, ensuring proper and timely delivery directly to the needy underprivileged people as part of the **NSS Social Development Team** at IIT Bombay
- Conducted structured **interactions and feedback sessions** with assigned mess workers, carefully compiling suggestions to improve welfare, address challenges and enhance overall working conditions through NSS initiatives
- Solved **100+** problems on **LeetCode**, also improving coding skills, logical reasoning and problem-solving ability
- Earned **4,000+ XP** on Coding Ninjas, demonstrating consistent practice and proficiency in programming challenges
- Actively competed in diverse institute-level sports tournaments, including **Institute Turf League** and **Department Table Tennis**, demonstrating strong teamwork, leadership and collaboration in highly competitive settings