Shubham Hazra
Computer Science & Engineering
Indian Institute of Technology Bombay

210100143
B.Tech.
Gender: Male
DOB: 01/11/2003

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	9.66

Pursuing a **Minor** degree in **Artificial Intelligence** and **Data Science** from **C-MInDS, IIT Bombay**

Scholastic Achievements

- Achieved **99.81 Percentile** in **JEE-Main** out of over 1 million candidates *(2021)*
- Secured **All India Rank(AIR) 1207** in **JEE-Advanced** out of over 0.14 million candidates *(2021)*
- Secured **AP grade** for excellent performance in **PH 108-Basics of Electricity & Magnetism** *(2022)*
- Secured a **Branch Change** to **Computer Science** department on the basis of academic performance *(2022)*
- **Awarded fellowship** in the prestigious **KVPY (Kishore Vaigyanik Protsahan Yojna)** SX *(2021)*

Key Projects

FastChat
(Autumn 2022)

Guide: Prof. Kavi Arya | Ongoing Course Project : Software Systems Lab *IIT Bombay*

- Developing a messaging software by building a network of clients interacting via servers acting as mediators
- Focusing on obtaining **high throughput** while using only **limited resources** dedicated for the servers
- Ensuring **low latency** of individual message deliveries and **end-to-end encryption** between clients
- Using **python socket library** to develop the network, using **open source libraries** for authentication and communication, **PostgreSQL** database to store the data and **bash** for scripting and collecting results
- Adding flair to this web application by implementing an interactive frontend using **HTML, CSS and JavaScript**

Rail Planner
(Autumn 2022)

Guide: Prof. Supratik Chakraborty | Course Project : Data Structures and Algorithms Lab *IIT Bombay*

- Developing a railway planner using algorithms such as **Merge Sort, KMP, Quicksort**, etc.
- Utilising Data Structures such as **linked lists, Binary Search Trees, AVL Trees, Hash tables, Tries**, etc.
- Implementing features such as adding and deleting stations, journeys and travel reviews, advanced search functionalities

Monte Carlo Analysis of Statistical Theorems
(Autumn 2022)

Guide: Prof. Suyash Awate | Course Project : Data Analysis and Interpretation *IIT Bombay*

- Used **MATLAB** to implement a Monte Carlo simulation of a given Probability distribution
- Empirically verified various statistical theorems such as The law of large numbers, Poison thinning and the Gaussian nature of the Random Walk by running appropriate random simulations using **Python numpy, matplotlib**

Multiplayer Tic-Tac-Toe
(Autumn 2022)

Guide: Prof. Kavi Arya | Course Project : Software Systems Lab *IIT Bombay*

- Used **Java Socket Programming** for **inter process communication** using the **peer-to-peer model**
- Created the tic tac toe game using this model and handled various newtork and **IOStream exceptions**

Bubble Trouble
(Autumn 2022)

Guide: Prof. Parag Chaudhuri | Course Project : Computer Programming and Utilization *IIT Bombay*

- Developed a video game using the **simplecpp graphics library** and object oriented programming in **C++** with a physics simulation to model the motion of bubbles alnog with features such as timers, health bars, levels and scores

Technical Skills

Programming Languages:	C++, Python, MATLAB, Java, Bash, Solidity, Sed, AWK
Software & Tools:	Git, LaTeX, MySQL, NumPy, Pandas, Matplotlib, Doxygen, Sphinx, gdb
Web Development:	HTML, CSS, JavaScript, BootStrap

Extracurricular

- Successfully completed one year under **National Sports Organization(NSO)** in **Chess** at IIT Bombay *(2022)*
- Pitched a **Business Model Canvas** for a startup in the health sector which entailed making online ambulance bookings, for the EnB Buzz competition conducted by the **Entrepreneurship cell of IIT Bombay** *(2021)*
- Participated in a team of 3 and wrote a working script and successful submission in **Google Hashcode 2021** *(2021)*
- Worked in a team of 4 to make an ESP32 **WiFi-controlled bot** for XLR8 conducted by **ERC, IITB** *(2022)*