Chaitanya Aggarwal
Computer Science & Engineering
Indian Institute of Technology Bombay

210050038
B.Tech.
Gender: Male
DOB: 07/11/2003

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

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

Scholastic Achievements

- Secured **All India Rank 8** in Joint Entrance Examination **Advanced** amongst the 1,50,000 candidates *(2021)*
- Attained remarkable performance: **AIR 62** in **JEE Main** | **AIR 51** in **KVPY** | NTSE Scholar with State Rank **1** *(2019-21)*
- Awarded 2 **Advanced Performer(AP)** grade for exceptional performance in **Differential Equations**, **Economics** *(2022/3)*
- One of **Top 30** students of North India to qualify **Regional Mathematics Olympiad** and appear for **INMO** *(2020)*
- Among the National **Top 10** in **Indian Olympiad qualifier of Astronomy Part II** and **Top 64** in **Indian Olympiad qualifier of Chemistry Part II** and successfully completed both Orientation Camps for Internation Olympiads *(2021)*

Work Experience

Franklin Templeton Investments | *Software Development and Data Science Intern* *May'23-July'23*

- Collaborated with Research Analysts to develop interactive charts, tables and various tools on the internal website using **Php and SQL** in backend and **JavaScript and AmCharts** in frontend to facilitate analysis of bonds
- Automated data extraction from **Bloomberg** using Python (xbbg and blpapi libraries), and facilitated seamless storage in CSV format; Developed and scheduled **Perl** scripts to subsequently upload the files to **MySQL** database
- Worked with Data Scientists on a loan default model using the **Random Forest** algorithm using Databricks and Spark
- Developed a Jupyter notebook that uses Bloomberg's **BAM** Model and Custom Prepayment Scenarios to generate profiles

Key Projects

FastChat | Course Project : Software Systems Laboratory *IIT Bombay, Autumn 22*

- Implemented an end-to-end **encrypted messaging** platform for text and image sharing in both direct and group chats. Utilized Client-Server model with Multiple Servers and **Load Balancing** for high throughput and **<0.1s** latency

Bokeh Generator | Winter in Data Science *Analytics Club, Winter 22*

- Rendered **Non-Uniform Bokeh Effect** on complex input data with multiple objects using TensorFlow to create a **Inverted Pyramid** Convolutional Neural Network (CNN) based on **PyNet CNN** by training it on 5k pair dataset

Cache Optimisation | Guide: Prof. Biswabandan Panda *Course Project: Computer Architecture, Spring 23*

- Used **ChampSim** simulator to implement different Cache Hierachies and Replacement Policies like LRU, LFU, LFRU, FIFO and Improved IPC in **Graph Workloads** by developing a fusion of exclusive and non-inclusive cache hierarchies

CodeWars-V3 | Bot Programming Competition *Web and Coding Club IIT Bombay, Spring 23*

- Designed a **multi-player strategy** game using **OOPs** with the backend of the game in **C++** and graphics engine using **Simple and Fast Multimedia Library** and a **Python API** allowing players to create strategies to compete

Puzzle Sat Solver | Guide: Prof. Ashutosh Gupta *Course Project: Logic for CS, Spring 23*

- Utilized **Python's Z3** library to devise a SAT solver for a challenging n x n grid game. Successfully converted the game rules into a SAT problem and implemented the solver to determine if it is feasible to achieve the desired grid configuration

Introduction to Algorithmic Trading | Summer of Science *Maths and Physics Club, IIT Bombay, Summer 22*

- Learnt about **Modern Portfolio Theory** and **Markowitz's hypothesis** and understood methods to prevent **Data Snooping Bias** and **Survivorship Bias** and gained knowledge about strategies like **Mean Reversion** and **Momentum**

Railway Journey Planner | Course Project : Data Structures and Algorithms Lab *IIT Bombay, Autumn 22*

- Assembled a Railway Planner which stores stations, trains, journeys using data structures including dictionaries, heaps, AVL trees and uses algorithms like BFS, DFS, Dijkstra and **KMP** to plan optimal routes based on different constraints

Forecasting Fours | Hello Foss : Open Source Event *Web and Coding Club, Autumn 23*

- Developed a classification Deep Neural Network using **ResNet9** with **Skip Connections** in PyTorch, incorporating Convolution Layers, Max Pool Layers, ReLU activation, and Cross Entropy Loss achieving above **90% accuracy**

Technical Skills

Programming Languages	Proficient in: C++, Python | Familiar with: Java, Bash, MATLAB, Sed, AWK, PHP
Data Science	Keras, TensorFlow, PyTorch, Matplotlib, NumPy, Pandas, Scikit-learn
Miscellaneous	HTML, Bootstrap, Javascript, CSS, Git, LaTeX, MarkDown, Doxygen, Sphinx

Positions of Responsibility

Institute Web and Coding Convener | *Web and Coding Club, IIT Bombay* *Jun'22- Present*

- Working in a team of **8** to organise 40+ events catering to the programming interests of **10K+** Institute students
- Introductory Host for the **Solana Developers Tour** India, Mumbai Edition attended by 250+ from the institute and outside