

Pursuing Minor in Data Science and Artificial Intelligence

## SCHOLASTIC ACHIEVEMENTS

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- Secured **All India Rank 1** in Joint Entrance Examination Advanced (**IITJEE**) amongst **1,50,000+** candidates (2021)
- Secured **All India Rank 1** in Joint Entrance Examination Main amongst **9,00,000+** candidates (2021)
- Achieved **All India Rank 1** and was awarded the prestigious **KVPY fellowship** by **IISc Bangalore**, India (2020)
- Awarded **Oppo Genius+ Scholarship** covering entire Tuition Fee for B.Tech program by Oppo India (2022)
- Recipient of the **A-STAR Youth** scholarship, offered by the **Ministry Of Education, Singapore** (2018)
- Recipient of the National Talent Search Examination (**NTSE**) scholarship by NCERT, Govt. of India (2019)
- Ranked amongst **top 5** out of **20,000+** students appeared in State Talent Search Exam (**STSE**) (2018)

## OLYMPIADS

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- Won **Silver Medal** for India at **International Zhautykov Olympiad**, held remotely by Almaty, Kazakhstan (2021)
- Contributed to the Experimental Round of **Asian Physics Olympiad-2022** by proofreading problems (2022)
- Amongst the 43 students invited to attend selection camp of **IJSO**, International Junior Science Olympiad (2018)
- Amongst 42 students invited to attend selection camp of **IPhO**, International Physics Olympiad (2019, 2020)
- Amongst 47 students invited to attend selection camp of **International Olympiad in Astronomy and Astrophysics** (2020)
- Chosen as a part of team to represent India in 21st Asian Physics Olympiad **APhO**, organised by Taiwan (2021)
- Part of the Grading Team of **Indian National Physics Olympiad**, evaluated **300+** scripts (2022)

## KEY PROJECTS

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### CNN-Lytical

*Seasons of Code*

Summer 2022

*Web and Coding Club, IIT Bombay*

- Explored various **Deep Learning** models for Computer Vision tasks like classification, segmentation and object detection
- Performed Image classification for MNIST dataset, from **scratch** using numpy achieving accuracy of **96.6%**
- Implemented image classification model for **CIFAR-10** dataset using **Convolutional Neural Networks**.
- Designed a segmentation model for **Caravana** dataset of size 80 by implementing **UNet** using **PyTorch**.

### Railway Planner

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

Autumn 2022 - Present

*IIT Bombay*

- Implemented the core **algorithms** behind the simplified model of a **Railway Planner system**
- Built the interface to **parse large data** to create an efficient database query system to handle user queries effectively
- Utilised Tries to implement **auto-completion** for searching predictive completion application using **KMP** algorithm
- Implemented a **rating and filtering system** for journey reviews creatively using **Heap and Priority Queues**
- Will utilise **graph** based models and algorithms to find **optimal** journey paths and properties in least time

### GNR Project

*Guide: Prof. Biplab Banerjee | Ongoing Course Project : Machine Learning for Remote Sensing II*

Autumn 2022 - Present

*IIT Bombay*

- Point 1
- Point 2
- Point 3

### FastChat

*Guide: Prof. Kavi Arya | Ongoing Course Project : Software Systems Laboratory*

Autumn 2022 - Present

*IIT Bombay*

- Point 1
- Point 2
- Point 3

## OTHER PROJECTS

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### Tic-Tac-Toe : Socket Programming

Autumn 2022

Guide: Prof. Kavi Arya | Course Project : Software systems Lab

IIT Bombay

- Developed a peer-to-peer model of tic-tac-toe game for two peers using Socket Programming in Java
- The two players play their moves on different terminals and communicate through a socket connection
- Used Sockets to keep track of the game by informing each client so that they can each update their own state

### Bubble Shooter

Autumn 2021

Guide: Prof. Parag Chaudhary | Course Project : Computer Programming and Utilization

IIT Bombay

- Designed an interactive single player game to demonstrate the **Object Oriented Paradigm** in C++.
- Handled various events like collision of bullet, splitting of bubbles in different sizes, collision of bubble and shooter.
- Implemented Timer, Score Card, Health Counter, Winning and Losing screen, resulting in a large code base

### Number Slider Puzzle

Spring 2022

Guide: Prof. Rushikesh K. Joshi | Course Project : Abstractions and Paradigms in Programming

IIT Bombay

- Implemented the popular number slider puzzle in with **FLTK Library** in C++, using **inheritance** and **event handling**.

### Frog Fight

Autumn 2021

Game Development Hackathon

DevCom IIT Bombay

- Ideated and Developed a creative 2-player web game using HTML, JavaScript and Phaser JS game engine.
- Implemented various features like collisions, penalties, bonuses, rotating platforms and variety of sound effects

## TECHNICAL SKILLS

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<b>Programming Languages</b>	C++, Python, Prolog, Java, Bash, Awk
<b>Development</b>	HTML, Bootstrap, Javascript, CSS, Git, L <sup>A</sup> T <sub>E</sub> X, Doxygen, Sphinx, Sed
<b>Data Science</b>	PyTorch, Matplotlib, NumPy, Pandas, R

## POSITIONS OF RESPONSIBILITY

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### Social Secretary

Dec'21- Present

Computer Science and Engineering Association (CSEA)

IIT Bombay

- Responsible for organizing and administering all social activities and events in the CSE department
- Collaborated with rest of the secretaries to promote interaction and bonding between students of different batches and between students and professors by managing various social and sports events
- Organised and managed large scale events like Department Open day, Department Lunch, Department Trek, Department Badminton Competition, Inter Department Online Sports Meet

### Class Representative

Dec'21- Present

Department of Computer Science Engineering

IIT Bombay

- Represented the entire batch of **180** students to decide and disseminate important academic and non academic information.
- Assisted professors and TAs in rescheduling and restructuring academic evaluation during unprecedented circumstances

## RELEVANT COURSES

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<b>Computer Science</b>	Data Structures and Algorithms*, Discrete Structures*, Data Analysis and Interpretation*, Machine Learning for Remote Sensing II*, Software Systems Lab*, Computer Programming and Utilization, Abstractions and Paradigms for Programming, Computer Networks**, Digital Logic Design**, Design and Analysis of Algorithms**, Logic for Computer Science**
<b>Mathematics</b>	Calculus, Differential Equations, Linear Algebra
<b>Others</b>	Quantum Physics and Application, Basics of Electricity and Magnetism, Introduction to Electrical and Electronics Circuits*

\* : To be completed by December 2022 \*\* : To be completed by April 2023

## EXTRACURRICULAR

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- Appointed as the **District Youth Election Icon**, by the Additional District Magistrate to motivate youth to register themselves in electoral list and cast their vote on National Voters Day. (2022)
- Placed **first** in **Bazinga** (maths competition) organized by **Maths and Physics Club, IIT Bombay** (2022)
- Shortlisted in **Top-16 in Codewars**, a bot programming contest conducted by Web and Conducting Club, IITB (2022)
- Engineered an app-controlled bot, using Arduino ESP32 as a part of **XLR8** competition organised by Electronics and Robotics Club IITB, and completed the track by crossing all hurdles (2022)
- Winning team of Venture Capitalist Investment Competition **VCIC** organised by Finance Club, IITB (2022)
- Developed the business model of an agro-tourism startup, as a part of EnBuzz Business pitching competition (2021)
- Participated in Educational and Cultural **Exchange Program** at Xavier College, Melbourne, **Australia** (2018)