Hitesh Kumar
Computer Science & Engineering
Indian Institute of Technology Bombay

210050066
B.Tech.
Gender: Male
DOB: 15/08/2004

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	7.86
Intermediate	CBSE	Disha Delphi Public School, Kota	2021	96.80%
Matriculation	CBSE	Disha Delphi Public School, Kota	2019	93.20%

SCHOLASTIC ACHIEVEMENTS

- Secured an **All India Rank 658** in the **IIT-JEE (Advanced)** exam among over 1.5 lakh students *(2021)*
- Secured an **All India Rank 399** in the **IIT-JEE (Mains)** exam among over 1 million students *(2021)*
- Awarded the **National Talent Search Examination (NTSE) Scholarship** by NCERT, Govt. of India *(2019)*
- Secured **All India Rank 305** in **KVPY 2020-SX Stream** among 1 lakh+ students, held by IISc, Bangalore *(2020)*

OLYMPIADS AND SCHOLARSHIPS

- Among **top 10%** scorers of my institution in **National Mathematics Talent Contest**, held by AMTI *(2018)*
- **Rank 17** in the **International Olympiad of Mathematics (IOM)**, held by SilverZone Foundation *(2018)*
- **Rank 28** in the **International Mathematics Olympiad (IMO)**, held by Science Olympiad Foundation *(2018)*
- **State Rank 17** in the **International Informatics Olympiad (IIO)**, held by SilverZone Foundation *(2018)*
- **Rank 113** in the **International Mathematics Olympiad (IMO)**, held by Science Olympiad Foundation *(2017)*
- Recieved Certificate of **Distinction** in Australian National chemistry Quiz (ANCQ) *(2017)*

KEY PROJECTS

Automated System for Hydroponics | Team D.A.S.H. *(March 2022 - August 2022)*
Institute Technical Summer Project *Institute Technical Council, IIT Bombay*

- Our team secured 2nd place among over 90 project submissions, which is a testament to the determination of the team
- Worked on forming a self-sustaining model for remotely monitoring and directing plant growth using a soil-less method
- Programmed **Arduino** along with **pH** and **TDS** sensor to monitor the growth parameters of the plant saplings
- Delivered the necessary volatile solutions using **Solenoid Valves** to keep their levels within a predetermined range
- Utilized **IoT** to create an interface displaying various parameters and sending back necessary adjustments to controllers

Digitization of Hospital *(September 2022 - Present)*
Under Prof. Sandip Mondal *IIT Bombay*

- Designing an **administrative console user interface** application for **digitization** of the Hospital functionalities
- Developing the **Android™ application** for the users with the help of the IDE, **Android Studio** using the **Java**
- Developing the **Web application** for the hospital staff with the help of HTML, Bootstrap and **Django**
- Created two different interfaces, one for admin and another for user login, each with its respective functionalities
- Admin can update their hospital's data by updating the medical records along with different handful functionalities; meanwhile, the user can utilise the hospital's functionalities according to their prescription

Cinema A to Z *(October 2022 - November 2022)*
Prof. Kavi Arya | Course Project : Software Systems Lab *IIT Bombay*

- Developed a user-friendly **web application** using the **Django** framework, as well as HTML, CSS, and Bootstrap
- Created login and logout session for the users, along with the search functionality for the user recommended movie
- Scraped movies data from different websites using **Beautifulsoup** and then stored them in the **sqlite** database

Railway Journey Planner *(August 2022 - November 2022)*
Prof. Supratik Chakraborty | Course Project : Data Structures and Algorithms Lab *IIT Bombay*

- Developed a railway planner with various types of **data structures** such as graphs using C++ programming language
- Implemented different efficient algorithms such as **KMP** and **quicksort** for storing and utilising data effectively
- Train journeys are scheduled using **dictionary** in which the journey details are stored and linked to each other
- Used heaps to **prioritize** user reviews for each train, sorted the reviews using **quicksort**, and stored them in **Trees**
- Implemented two parts, one for admin and one for users; the admin part can add and change the planner's data, whereas the user part can only use the data to get information such as find journey, find or enter reviews

Tic Tac Toe Game *(October 2022)*
Prof. Kavi Arya | Course Project : Software Systems Lab IIT Bombay
- Developed a peer-to-peer model of the famous **Tic Tac Toe game** using the **Java** programming language
- Implemented inter-process communication using **socket programming** along with exception handling in the process
- Each peer has a main server socket and two base sockets that are used to connect the servers of the two players

Image Processing and Data Analysis *(September 2022)*
Prof. Suyash P. Awate | Course Project : Data Analysis and Interpretation IIT Bombay
- **PCA** was used to approximate linear relationships in scatter plots, investigate picture data sets of handwritten digits.
- Developed a uniform sampling procedure in **Euclidean** plane and researched multivariate Gaussian distributions

Dot Game *(April 2022)*
Prof. Rushikesh K. Joshi | Course Project : Abstractions and Paradigms for Programming Lab IIT Bombay
- Developed a single player game with the help of **Fast Light Toolkit** widget library and C++ programming language
- Implemented an algorithm to remove the dots from the game window for creating any shape using **Inheritance**
- Implemented **Event Handling** in a specific way to take the response from the user action's for particular events

Bubble Trouble Game *(January 2022 - February 2022)*
Prof. Parag Chaudhuri | Course Project : Computer Programming and Utilization IIT Bombay
- Developed a single player Bubble Trouble game using **Object Oriented Paradigms** in **C++** programming language
- Enhanced the game by adding two advanced functionality using the ideas of **classes**, **inheritance**, and **vectors**
- Used **event handling**, assigned various responses by the game and designed the game for various difficulties

POSITIONS OF RESPONSIBILITY

UG Convener - Creatives and Media Team *(July 2022, ongoing)*
Institute Technical Council IIT Bombay
- Promoting the technical council among **15 thousand** members as a part of the creatives and media team
- **Publicizing** all the events conducted by the council through our social media handles to increase the target audience
- Filming and editing the videos for different events along with managing the council's social media accounts

TECHNICAL SKILLS

Programming	C++, C, Python, Java, Bash, Sed, AWK, FLTK, Prolog
Web Development	HTML, CSS, JavaScript, Bootstrap, Django
Softwares & Tools	Git, Android SDK, FLutter, LaTeX, Doxygen, Sphinx, Canva, Adobe Premiere Pro, Android Studio, Docker, Gdb, Jupyter Notebook, Adobe Photoshop, Adobe After Effects, Microsoft Office Suite, Autodesk Fusion 360

COURSES UNDERTAKEN

Computer Science	Digital Logic Design and Computer Architecture + Lab*, Computer Network + Lab*, Logic for Computer Science*, Design and Analysis of Algorithms*, Discrete Structures, Data Structures and Algorithms + Lab, Data Analysis and Interpretation, Software Systems Lab, Abstractions and Paradigms for Programming, Programming Paradigms Lab, Computer Programming and Utilization
Mathematics	Linear Algebra, Differential Equations, Calculus
Others	Quantum Physics and Application, Basics of Electricity & Magnetism, Organic & Inorganic Chemistry, Physical Chemistry, Biology, Engineering Graphics & Drawing, Introduction to Electrical and Electronics Circuits, Economics*

(*to be completed by April 2023)

EXTRACURRICULAR ACHIEVEMENTS

- Completed a year-long **Yoga** programme under National Sports Organization (NSO), IIT Bombay *(2021-2022)*
- Designated as **presenter** for the UG Freshers Orientation event conducted by the Institute Technical Council *(2022)*
- Secured 3rd rank in the **Freshiezza Photography** competition conducted by the Pixels Club, IIT Bombay *(2022)*
- Organized a **video editing** workshop in the convener's camp conducted by the Institute Technical Council *(2022)*
- Participated in **Virtual Filmmaking Session** (VFMS) competition by the Silverscreen Club, IIT Bombay *(2022)*
- Participated in a month long **Dance Workshop** conducted by Rangeela Dance Academy, Bhadra (Rajasthan) *(2014)*