



Ashish Kumar Gupta  
Computer Science & Engineering  
Indian Institute of Technology Bombay

180050013  
UG Second Year  
Male  
DOB: 27-02-2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	0.00
Intermediate/+2	Uttar Pradesh Board	Sarju Inter College	2018	84.60
Matriculation	CBSE	Jawahar Navodaya Vidyalaya, Mau	2016	10.00

Pursuing a minor in **Management**

## CREDENTIALS

- Achieved **All India Rank 401** in **JEE Advanced** out of **230 thousand** candidates (2018)
- Secured **All India Rank 705** in **JEE-Main** out of **1.4 million** candidates across India (2018)
- Awarded Certificate of Merit from the **National Board for Higher Mathematics** for promising performance in Indian National Mathematical Olympiad(INMO) (2017)
- Recieved Institute **Merit-cum-Means** Scholarship by IIT Bombay (2018)

## KEY PROJECTS

### Path Finder

Spring 2019

Guide: Prof. Amitabh Sanyal (Course Project)

IIT Bombay

- Designed a program that determines the shortest path on a map between any two points
- Improved implementation of **A\* algorithm** which is integrated with Suitable **GUI** platform in DrRacket to simulate the shortest path on map
- Analysed and resolved the real-life situations which involves re-routing, obstacles and checkpoints

### Chess Maestro

Summer 2019

Institute Technical Summer Project(ITSP)

IIT Bombay

- Built a **chess-playing robot** which detects the opponent's move, uses a chess engine to come up with the best possible move and execute the move with its robotic arm
- Robot incorporates aspects of **computer vision, robotics, 3D printing** and chess
- Used **OpenCV** to implement a algorithm to recognize positions of chess pieces on the board
- Designed the **robotic arm**, that has three degree of freedom, to perform the robot's move
- Designed the algorithm to control the robotic arm through **Arduino**

### Splitwise Clone

Ongoing Project

Guide: Prof. Amitabha Sanyal (Course Project)

IIT Bombay

- Developed an enhanced model of **Splitwise** app using **Django** for its Web interface
- Extended the functionality by incorporating Python OCR for automatically reading and updating from pictures of bills and reciepts uploaded by the user
- Created interesting spending reports and graphs of the person monthly and anually, informing user on which thing he spends most

### Cryptography & Security

Spring 2019

Guide: Prof. Amitabha Sanyal (Course Project)

IIT Bombay

- Designed a program in DrRacket to encode a message by monoalphabetic substitution technique and also to decode the ciphertext
- Used different strategies like **ETAI, bigrams, common-words-double** to decode the encoded text
- Implement a powerful operation called **Dictionary closure** to check whether a partially known word can be completed in unique way or not on the basis of substitution of dictionary words

## Decision Tree

Spring 2019

Guide: Prof. Amitabha Sanyal (Course Project)

IIT Bombay

- Constructed a **Decision Tree** from training data set to classify the test data using **DrRacket**
- Used the decision tree to get the most probable value of an attribute for many **data set**
- Used **Information Gain** method for the selection of next optimal node by calculating the **Entropy Difference** of successive nodes

## OTHER PROJECTS

---

### Racket Language Interpreter

Spring 2019

Guide: Prof. Amitabha Sanyal (Course Project)

IIT Bombay

- Devised a program which interprets any code in Racket, and performs frame-wise execution

### My Webpage

Autumn 2019

Guide: Prof. Amitabha Sanyal (Course Project)

IIT Bombay

- Developed a **Personal Homepage** using **HTML, CSS, Bootstrap**
- Incorporated Javascript for HTML scripting and PHP for back end web development

## TECHNICAL SKILLS

---

<b>Programming Languages</b>	C++, C, Python, Bash, Racket, SWI-Prolog, Matlab
<b>Web Development</b>	HTML, CSS, JavaScript, Bootstrap, Django
<b>Tools and Softwares</b>	Git, AutoCAD, L <sup>A</sup> T <sub>E</sub> X, SolidWorks, Arduino, Opencv, MakeFiles

## COURSES UNDERTAKEN

---

<b>Computer Science</b>	Data Structures and Algorithms*, Data Analysis and Interpretation*, Discrete Structures*, Software Systems Lab*, Abstractions and Paradigms in Programming
<b>Non-Core</b>	Marketing Management*, Introduction to Electrical and Electronics Circuits, Linear Algebra, Differential Equations, Calculus, Biology

*\*to be completed by November 2019*

## POSITIONS OF RESPONSIBILITY

---

### Organizer | Public Relations & Hospitality | Mood Indigo 2019

December 2018

Asia's Largest College Cultural Festival with Net Worth of INR 60 million, a Footfall of 140,000 & 220+ Events

- Worked in a team to manage **hospitality** demands of over **140k** visitors
- Actively helped in maintaining the conditions of all the rooms for a convivial environment

## EXTRACURRICULARS

---

- Successfully completed one year course of **Piano Learning** under **National Sports Organization (NSO)** IITB (2018-19)
- Ranked **3rd Position** at state level in **Bhartiya Sanskriti Gyan Pariksha** under the aegis of Gayatri Teerth, Shantikunj, Haridwar (2013)
- Ranked **25th Position** at state level in **SOF-International Mathematics Olympiad** (2014)
- Secured **Top Position** in Regional **Chess Competition** organized by Navodaya Vidyalaya Samiti, Lucknow at Jawahar Navodaya Vidyalaya, Ghaziabad (20th April 2015)
- Successfully Completed the Beginners level **Swimming camp** held by IIT Bombay (June 2019)