Shubh Bajaj

Final Year Undergraduate | B.S.
Mathematics and Scientific Computing (Grad. 2024)

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Academic Qualifications

Year	Degree/Certificate	Institute	Performance
2020 - Present	B.S. (MTH)	Indian Institute of Technology Kanpur	**7.8**/10.0
2018 - 2020	Class XII (TSBIE)	FIITJEE Junior College, Hyderabad	**98.00**%
2006 - 2018	Class X (SSC)	All Saints High School, Hyderabad	**9.8**/10

Scholastic Achievements

- Secured **All India Rank 569** in **Joint Entrance Examination (JEE) - Advanced 2020**, among 0.15 million candidates
- Secured **All India Rank 1189** in **Joint Entrance Examination (JEE) - Mains 2020**, among 0.87 million candidates
- Scored **394 marks out of 420** in Birla Institute of Technology and Sciences Admission Test **(BITSAT) - 2020**
- Received the **Academic Excellence Award**, given by IIT Kanpur, for the Academic Year 2020

Professional Experience

Disney+Hotstar | Software Engineering Intern *May'23 - July'23*

Objective	• To automate panic/static page generation in real-time, which was previously done manually on-call
Approach	• Constructed a Kafka consumer to indentify live events that had been encoded inside the consumed messages • Developed a robust code implementation that triggers the GoCD pipeline for seamless panic page uploads by interacting with the API endpoint, whenever the event processor detects the presence of a live event • Utilizied go lang to build the kafka consumer and also to handle the GoCD pipeline for panic page uploads
Impact	• This kafka consumer is engineered for high-stakes events like the upcoming World Cup and Asia Cup • If designed with sufficient generality, it can be employed to manage panic uploads for multiple countries

Relevant Projects

Insta-Chat Application | HTML | CSS | JavaScript *Self Project*
- Developed a real-time chat application using **Node.js**, **Socket.io**, and **Express**, enabling instant messaging interactions
- Crafted a user-friendly interface, enabling users to seamlessly enter their names and engage in **real-time** chat
- Utilized Node.js to set up the server-side structure, managing multiple connections, and enabling smooth client communication
- Integrated Socket.io for bidirectional communication alongside message broadcasting, facilitating real-time user engagement
- Adopted the Express framework to create a robust server, handling HTTP requests effectively and routing messages for users

Market Matrix | Java *Self Project*
- Developed a text-based user interface using **object oriented** principles and hashmaps as the underlying database
- Implemented **CRUD** (Create - Read - Update - Delete) operations for manufacturers, customers, products, shops and warehouses as entities and implemented **relational mappings** between them, in Java programming language

Tic Tac Toe (Unbeatable) | Python *Self Project*
- Programmed an invincible tic-tac-toe game that never lets the player win the game, in python programming language
- Employed **backtracking** and **recursion** to find the optimal move for the A.I, assuming that the player also plays optimally
- Utilized **Mini-Max Algorithm** to ensure that A.I. plays to its potential, minimising its losses while maximising its successes

WhatsApp Automation Bot | Python *Self Project*
- Employed Python programming using **Selenium** automation to develop a script for automating WhatsApp messaging
- Automated communication by efficiently sending bulk WhatsApp messages to multiple groups, while also extending automation to include attachments such as images and videos, significantly enhancing the multimedia messaging experience
- Enabled one-time scanning of QR codes for streamlined authentication, hence maintaining consistent automation
- Crafted a user-friendly input configuration, allowing users to input group names, messages, and attachment paths

Personal Portfolio Website | HTML | CSS | JavaScript *Self Project*
- Developed a comprehensive portfolio website showcasing a wide range of components like achievements, skills, and projects

Technical Skills

Languages	Softwares/Tools
C	C++	Python	Java	HTML	CSS	Go Lang	JavaScript	LaTeX	Apache Kafka	Git	AutoCAD	Micro-cap

Relevant Courses

Fundamentals of Computing	Data Structures and Algorithms	Modern Cryptology
Set Theory and Logic	Numerical Analysis and Scientific Computing	Probability and Statistics
Linear Algebra and ODE	Several Variable Calculus and Differential Geometry	Abstract Algebra