ANUBHAV JAIN | 15CS10062

COMPUTER SCIENCE & ENGG. (B.Tech 4Y)

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2019	B.TECH	IIT Kharagpur	9.50 / 10
2015	AISSCE (All India Senior School Certificate Examination)	Indian Public School, Ambala [CBSE]	93%
2013	AISSE (All India Secondary School Examination)	Indian Public School, Ambala [CBSE]	10 / 10

INTERNSHIPS

Summer Analyst, Goldman Sachs Group, Bengaluru (May-July 2018)

A trading platform is an interface for trade between a client & exchange. To regulate the flow of orders for either client or exchange (so as to avoid risk related to any technical bug/abnormal trading activity), certain **control limits**(rate, credit & notional control limits) needs to be set up based on client/exchange trading frequency & trading volume.

- Published all trading frequency & trading volume data from a 'low latency algo trading platform' & a 'market access trading platform' to a data source in real time. [Java]
- Created Grafana dashboards which consumed data from elasticsearch data source and provided various analytical functionalities to monitor all the trading activities.
- Consumed and summarized the trading data over different time intervals and created a utility to generate **automated daily reports** on this data & email it to intended audience, to help them make a decision on what value should the control limits be **calibrated** to for corresponding client/exchange. [Python]
- Used **Spock testing framework** to write tests to check working and correctness of added features.

Summer Intern, Unscrambl Inc, Pune (May-July 2017)

Worked on the following Microsoft Azure Services, and built several demos and applications using these tools :

- **Knowledge Exploration Service** - Created a backend engine that could interpret natural language queries with auto-completion suggestions feature. For this, built a compressed index from structured data, wrote schema for objects in JSON format and authored a grammar in XML format.
- **Azure Face API** - Implemented Face detection and Face recognition.
- **Microsoft Bot framework** - Developed a chatbot using Bot Builder SDK for Node.js by implementing **Azure Search Service** and by creating **Azure SQL Database**. Integrated it on social platforms like Facebook and Skype.

Using OpenCV library in Python, implemented **face recognition** from videos, webcam, as well as locally stored images.

PROJECTS

IIT-KGP Swarm Robotics Group | Work Profile : Researcher and Software Developer | 2016-17

Swarm Robotics is a research group that aims to make team of co-ordinating robots which use swarm intelligence to achieve objectives related to navigation & mapping.

- Implemented April Tags on robots for their localization.
- Worked on Leader Selection and Sensor Coverage Task of Robot Swarms.

Automated Question Answering for Travel Domain | B.Tech. Project | Guide : Prof. Pawan Goyal, IIT Kharagpur | August, 2018 - Present

- Working on developing an agent that could interpret natural language queries and answer the questions of travel domain using Knowledge Graph.

NGO Database System | Term Project under Prof. Shamik Sural, Database Management System Lab, Spring 2018 | Language : MySQL, PHP, HTML, CSS

- Designed a relational database for an NGO (which provides free education to underprivileged children). Hosted the database using LAMP (Linux, Apache, MySQL, PHP).
- Developed a website and an Android application for storing/querying/updating/deleting records of donors, members and school children from database.

Reliable UDP Server & Peer-to-Peer Chat Application | Term Project under Prof. Sandip Chakraborty, Networks Lab, Spring 2018 | Language : C/C++

- Implemented a reliable UDP server(for faster, in-order & reliable data transfer), by applying Slow-Start Congestion Control Algo over Sliding Window ARQ Protocol over UDP.
- Developed a P2P chat application with TCP as the underlying Transport Layer Primitive & also implemented Ping application using Raw Sockets and ICMP query messages.

Memory Resident Unix-Like File System | Term Project under Prof. Indranil Sengupta, Operating Systems Lab, Spring 2018 | Language : C/C++

- Implemented several functionalities of a Unix Shell, a Virtual CPU Scheduler on top of the Unix kernel and a Memory Resident Unix-Like File System.

COMPETITION/CONFERENCE

1st Runner Up in Microsoft Code.Fun.Do Oncampus Hackthon, 2017-18

- Designed a real time strategy game- "Planet X : Rise of Xander" (Unity3D), to create awareness among players about the damage caused to environment by human activities.
- Simulated an environment where players can construct buildings, plant trees & farms. Based on user actions, several natural calamities gets triggered (Bayesian network).

Also participated in code.fun.do Hackathon 2015-16 & code.fun.do Online 2016-17. Designed app for Windows & Android respectively, in a team of 3 on both occasions.

WORK EXPERIENCES

Mentor, Image Processing Winter Workshop - Technology Robotix Society, IIT Kharagpur (December, 2016)

- Taught 1st & 2nd year students the basic Image Processing algorithms such as blob detection, edge detection, noise filters, histograms etc & their implementation in OpenCV.
- Guided them through the completion of project "Object Tracking Using Image Processing".

Attended the same workshop as a trainee in 2015, made a **Traffic Signal Detection Bot**, that could move in forward/left/right direction or stop on the basis of traffic signal.

AWARDS AND ACHIEVEMENTS

- **International Assessment for Indian Schools (IAIS), 2014** - Won a **gold** medal from University of New South Wales for securing **1**st position (among all students from 16 countries of Asia) in IAIS 2014 - Mathematics.
- **National Level Science Talent Search Examination (NSTSE), 2015** - Secured All India Rank 102 and State Rank 1 in NSTSE 2015.
- **IIT JEE ADVANCED, 2015** - Secured All India Rank 1242(Gen) in Joint Entrance Examination (JEE) Advanced 2015, conducted by Indian Institute of Technology(s).
- Got **Department changed** from Mechanical Engineering to Computer Science & Engineering with an **Institute rank** of **1** in 1st semester among 1300+ students.
- **Nationwide Education and Scholarship Test (NEST), 2014** - Secured All India Rank 40 in NEST-Junior 2014.

SKILLS AND EXPERTISE

Proficient : C, C++, Python, Java, MySQL **Familiar** : HTML, PHP, JavaScript, XML, CSS, Verilog, MIPS Assembly Language **Tools** : OpenCV, Git, MATLAB, Octave
Relevant Courses Taken : Programming & Data Structures* | Algorithms-I*&II | Operating Systems* | Computer Networks* | Database Management Systems* | Machine Learning | Intelligent Game Design | Probability & Statistics | Software Engineering* | Compilers* | Computer Organization & Architecture* | Formal Language & Automata Theory | Discrete Structures | Switching Circuits & Logic Design* | Foundations of Cryptography | Financial Management. (***** Theory & Laboratory)
Ongoing Courses : Theory of Computation | Speech & Natural Language Processing | Image Processing | Artificial Intelligence | Parallel & Distributed Algorithms.

POSITIONS OF RESPONSIBILITY

Gopali Youth Welfare Society (GYWS) is a govt. registered NGO run by the students of IIT Kharagpur which provides free-of-cost education to underprivileged children.

- **Public Relations Officer** (May,18 - Present) : Handling press & media activities and acting as a representative of GYWS on public platforms.
- **Overall Coordinator** (May,17 - April,18) : Led a team of 70 members and oversaw the working of GYWS on management, sponsorship, publicity & financial fronts.
- **Senior Executive Member** (May,16 - April,17) : Helped in complete management of English medium school Jagriti Vidya Mandir (JVM) and successfully brought sponsorship of around INR 2.5 Lakhs from IIT Kharagpur campus residents consisting of students and professors.

!self declaration by the student