



Mohammad Ummair
Computer Science & Engineering
Indian Institute of Technology Bombay

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M.Tech.
Gender: Male
DOB: 03/06/1999

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2023	8.79
Graduation	Government College Of Engineering, Aurangabad	Government College Of Engineering, Aurangabad	2021	75.00%
Graduation Specialization: Information technology				

INTERNSHIPS

- **Plus Educator at Unacademy, India** (May 2021 - June 2021)
 - Mentored a batch of **20+ students**, provided guidance to students for GATE preparation.
 - Implemented **performance improvement plans** for under performing students using Customised Daily Practice Problems.
- **Project Intern at Tata Consultancy Services, India** (Feb 2021 - May 2021)
 - Deployed various **time series models** to **forecast client's export** demands which helped the company maintain stock for every day.
 - Developed **hierarchical time series** to predict client's export data
- **Machine Learning Intern at TechInvento, India** (May 2019 - June 2019)
 - Developed an automated **computer vision tool** to **digitize handwritten documents** which saved **\$1.5mn every month**.
 - Deployed **web application** using Node.js to monitor changes made by **computer vision algorithm**.

MAJOR PROJECTS AND SEMINAR

- **Solidity+ : A framework to detect bugs and vulnerabilities in smart contracts** (M.Tech Project, Guide: Prof. Virendra Singh) (Jan'22-till date)
 - Analysed **300+ smart contracts** to identify possible vulnerabilities.
 - Designed algorithm to **detect possible vulnerabilities** and different bugs.
 - Implemented Framework to detect and notify users of the present vulnerability.
 - Current work: Increasing robustness and efficiency of Solidity+.

COURSE PROJECTS

- **Key-Value Server Using GRPC** (CS744: Design and Engineering of Computing Systems, Autumn 2021)
 - Objective: To implement a **in-memory key-value store** as a client-server application running over TCP sockets.
 - Created a **multi-threaded server** that maintained KV pairs and a KV client that accepted user commands to manipulate KV pairs. Execution of these commands was done by communicating with KV server over sockets.
 - Implemented different caching techniques and also integrated **persistent storage** with it.
- **Advanced Manticore : An Enhanced Version Of Manticore** (CS762: Advanced Blockchain Technology, Spring 2022)
 - Objective: To make Manticore resilient to common bugs that are currently undetectable.
 - Detected **shortcomings of Manticore** by examining **over 100 smart contracts**.
 - Immuned Manticore against short comings like unchecked sends, gasless sends and many more.
- **Simulated Bitcoin Environment** (CS765: Introduction to Blockchains, Cryptocurrencies and Smart Contracts, Autumn 2021)
 - Objective: To develop Simulation of a **P2P Cryptocurrency Network**.
 - Designed and implemented simulation of **Bitcoin Environment**.
 - We created a simulation such that a number of transactions were created in a fraction of seconds and were used to make new blocks.

Other PROJECTS

- **Asset Performance Monitoring Application**
 - Objective: To develop an **asset performance monitoring application** integrated with machine learning algorithm.
 - Developed an APM which was integrated with **Machine Learning Algorithm** to **optimise performance** of mechanical devices used in industries.
 - This APM was made as a part of **Smart India Hackathon 2020**. APM takes realtime Machine data as input and provides the most optimal output expected from the machine.
- **Brain Tumor Detection Using Segmentation**
 - Objective: To design a system that differentiates within tumor & non-tumor images among MRI images using Computer Vision.
 - Designed a **Computer Vision** based Machine learning model with a dice score of 85.26%.
- **Captcha Cracker**
 - Objective: To develop an automated captcha cracking application using machine learning & selenium.
 - Developed an automated tool with **Machine Learning Algorithm** to crack captcha and fetch student details from college website.
- **Seba- The Electriciy Saver**
 - Objective: To develop a smart electricity conserving algorithm using IOT Devices and Computer Vision algorithms.
 - Developed an **IOT device** to reduce electricity consumption **Large Scale Industries** using Arduino relay circuits and **Computer Vision Algorithm**.
 - This device was developed as a part of Bhopal Smart City Hackathon 2.0.

POSITION OF RESPONSIBILITIES

- **Department Placement Co-ordinator** (July'22-Present)
 - Appointed as Department Placement Co-ordinator for Computer Science Engineering department of IIT Bombay to ensure smooth execution of placements.
- **Web Secretary, CSE Department - IIT Bombay** (July'22-Present)
 - Appointed as Web Secretary for Computer Science Engineering department of IIT Bombay to maintain CSE web pages.
- **Teaching Assistantship**
 - **CS 251:** Software Systems under **Prof. Amitabha Sanyal.** (Autumn 2021)
 - **CS 254:** Digital Logic Design Lab under **Prof. Virendra Singh.** (Spring 2021)
 - **CS 744:** Design & Engineering Of Computing Systems under **Prof. Mythili Vutukuru.** (Autumn 2022)
- **Event Head , Cicada GECA Wings 2K20** (Jan'2020 - Feb'2020)
 - Superheaded a **team of 16 students** for successful execution of a **national level technical event** with more than 100 participants
- **Event Coordinator, Short Term Training Program, GECA** (Jul'2020 - Jul'2020)
 - Volunteered as an Event Coordinator for training program organised to train professors about MATLAB.
- **Department Technical Committee Member, IT Department- GECA** (May'2017 - May'2018)
 - Appointed as **Technical Committee Member** for Information Technology department of Government College Of Engineering Aurangabad to maintain Systems and Labs.

ACADEMIC ACHEIVEMENTS AND EXTRA CURRICULAR ACTIVITES

- Secured **All India Rank 95** amongst 101922 students in **GATE CS 2021**.
- Winner of **Smart India Hackathon 2020** under the problem statement process modelling, GAIL India Pvt. Ltd.
- Secured **All India Rank 95** rank at Ninja Hire 2.0 Senior (4th year) Coding competition.
- Winner of **Coding Masters** organized by IT Department, Government College Of Engineering, Aurangabad as a part of ITSA week 2019.
- Winner of **Competitive Coding Competition** organized by Maharashtra Institute Of Technology, Aurangabad as a part of Techno-MIT 2K19.
- Runner-up of **Departmental Volleyball event** under ITSA Week 2018 organized by Government College Of Engineering, Aurangabad.
- **Hobbies:** Music, Guitar, Shayri, Volleyball