ADITYA MOROLIA

CSE Student | Undergrad Researcher (Quantum Computing) at C-STAR, IIIT Hyderabad

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EXPERIENCE

Technical Staff, **AICrowd**

📅 April 2020–July 2020   📍 WFH

- Built a simulator for the purpose of hypothesis testing on our reputation and ranking system in **Python**, then added features on the basis of the observations to the **Rails web app**
- After **winning** the campus **Reinforcement learning** challenge DroneRL, I was responsible for creating a new in house RL challenges.
- Developed a new **Django web app** named AICrowd classrooms to be launched soon.

Undergraduate Research Student

📅 May 2019 - Present   📍 IIIT Hyderabad, India

- I work with Prof. Indranil Chakrabarty on Quantum Physics and Quantum Computing.

Visiting Research Student

📅 Dec 2019 - Jan 2020   📍 HRI Allahabad, India

- Took up a research project on Quantum Coherence and tunnelling advised by Prof. A. K. Pati.

Teaching Assistant

📅 Jan 2020–Present   📍 IIIT Hyderabad

- Linear Algebra, Spring 2020 (UG1) and Monsoon 2020 (H2, PG1)
- Introduction to Quantum Information and Computation, Spring 2021 (H2, Elective)
- Responsibilities included taking tutorials, setting the assignments and projects, paper corrections and working with students on their projects.

Research Intern

📅 June 2019–August 2019   📍 ISB Mohali

- Work on basketball game data collection and data analysis with Dr. Siddharth Sharma to derive relation between team performance and pollsters' predictions.

Web and Server manager

Felicity, IIIT Hyderabad

📅 Dec 2018–Jan 2019   📍 Hyderabad, India

- Responsible for deploying the websites and utility services like the mailtrain on our server.

SKILLS

- **Programming and scripting:** C, C++, Python, Javascript, Bash
- **Web and Mobile:** HTML5, Bootstrap, Django, ReactJS, React-Native, Flask
- **Misc.:** Linux, Git, Docker, Postgres SQL, MySQL, Qskit, Sklearn, Pytorch, Scipy, SageMath, Latex, Golang, Neo4j

PROJECTS

Face Classification and Verification

- The project work included depth understanding as well as implementation of computing eigen-faces required to satisfactorily reconstruct a person in the given dataset (combining 3 different datasets), Face Recognition using kernels and classifiers, Visualization of faces using t-SNE and Face Verification.

Automated Bidding Agent

- Made an automated bidding agent for targeted Ad space using **Java** to compete in a second prize sealed bid auction under limited budget constraints.

Beginner's AI notebook

- Implemented standard ML algorithms, including backpropagation, classification and data representation, SVM and kernel tricks along with AI course.

Question Generation from a given corpus using NLP

- Designed a question generator from the corpus of Science textbooks using **NLTK, Spacey, gensim** involving concepts of Named Entity Recognition and word2vec in **24 Hours** in a team of 4 for a hackathon

Linux Shell

- Developed a terminal based shell using **C** that supports piping, I/O redirection, signal handline, background and foreground process management, etc.

Molecular Dynamics Simulation

- Python script to simulate molecular dynamics to calculate macroscopic properties like temperature and pressure using **Minimum image convention** and **Periodic boundary condition** using **Monte Carlo Markov chains methods**

Xv6 Schedulers and updates

- Implemented MLFQ, FCFS and Priority based scheduling, along with several other functionalities for Xv6 OS

Connect RJ/VJ Mobile App

- Project involved the development of a mobile platform that allowed people to portray their RJ/VJ skills.
- **Designed** and **developed** a prototype application using **React Native**

Game Development with Graphics Libraries

- Developed a replica of games like JetpackJoyride and SubwaySurfers using **OpenGL (C++) and WebGL(JavaScript) graphics libraries**
- Built a replica of Super Mario Bros using **Python**.

EDUCATION

B.Tech in Computer Science and MS by Research in Computational Natural Sciences

IIIT Hyderabad

📅 July 2017–Present   📍 Hyderabad

- CGPA: 8.54

CO-CURRICULARS

- **Corporate Relations Head, E-Cell, IIIT-H** April 2019 - May 2020
- **Marketing Head, Felicity, IIIT-H** June 2019 - May 2020
- **Literary Club Coordinator, IIIT-H** July 2018 - July 2020
- **Kickboxing Regional Title Belt winner** June 2015
- **Boxing, Swimming, Drumming**

January 21, 2021