

ADITYA MOROLIA

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

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in aditya-morolia

🔗 TheCharmingSociopath

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.

Teaching Assistant for Linear Algebra

📅 Jan 2020–May 2020 📍 IIIT Hyderabad

- Responsible for taking tutorials, problem setting and solving, paper correction, etc.

Research Intern (Remote)

📅 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.

Visitor

📅 Dec 2019 - Present 📍 HRI Allahabad, India

- Took up a research project on Quantum Coherence and tunnelling along with Dr. A. K. Pati.

Research Project on Approximate Counting Algorithms

IIIT Hyderabad

📅 July 2020 - Present 📍 Hyderabad, India

- Working on optimising a quantum algorithm for approximate counting on NISQ devices

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

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: 8.42
- **Sources:** Data Structures, Algorithms, Operating Systems, Graphics, Software Architecture, Statistical Methods in Artificial Intelligence, Information Security, Game Theory, Graph Theory, Statistics, General Relativity, Computational Science, Optimisation Methods

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**