

# Karthik Viswanathan

Portfolio | GitHub

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## EDUCATION

### IIIT HYDERABAD

**BTECH IN COMPUTER SCIENCE, MS IN COMPUTATIONAL NATURAL SCIENCE**

2019-2024 | Hyderabad, India

Teaching Assistant, Probability and Random Processes

Cum. GPA: 9.1 / 10

Semester GPA: 9.82 / 10

### AIS, RUWAIS

**HIGH SCHOOL**

2017-2019 | Ruwais, UAE

Summa Cum Laude, Literary Secretary

Cum. GPA: 97.8 / 100

## ACHIEVEMENTS

- **1st position** with highest score in the branch, Spring 2021 and Monsoon 2020 and **second rank** in branch.
- **University of New South Wales (UNSW-ICAS)** excellence award for Top 1% in ICAS-Computing Olympiad (2019).
- **Second rank** in GCC region with 97.8% in CBSE board examinations (2019).
- **15th International Rank** (Top 1%) and **2nd Zonal Rank** in National Cyber Olympiad (2019).

## COURSEWORK

### UNDERGRADUATE

Computer Systems Organization

Machine, Data, Learning

Design and Analysis of Software Systems

Data Structures

Data and Applications

Algorithm Analysis and Design

Introduction to Software Systems

Computing in Sciences

## SKILLS

### PROGRAMMING

Advanced:

Python • NodeJS • Javascript

Matlab • Rails • L<sup>A</sup>T<sub>E</sub>X

C • C++

Familiar:

CSS • PHP • Assembly

Frameworks:

Tensorflow • Pytorch • ReactJS • NodeJS

ExpressJS • NumPy • SciKit • Django

## EXPERIENCE

### CCNSB, IIIT-H | UNDERGRADUATE RESEARCH ASSISTANT

May 2021 - Present | Hyderabad

- Working under **CNRS bronze medallist Dr. Deva Priyakumar** in the domain of AI in drug discovery along with a team of 42 members and managing two projects with **flexibility displaying teamwork**.
- Achieved an **R2 score of 0.942** for a project on Binding Affinity Prediction using **Graph Isomorphism Networks with Attention Mechanism**.

### IIT-MADRAS | RESEARCH INTERN

Dec 2020 - Jan 2021 | Chennai

- Winter research, Systems Engineering of the Natural and the Artificial at IIT Madras. Worked on **thermal occupancy estimation under Dr. Raghunathan Rengaswamy**. Achieved accuracy of **100% in normal occupancy rooms and 95% accuracy in high activity areas** in order to estimate occupancy estimation.
- Project was proposed to **Freespace, HP2 4TP**.

### AICROWD | PLATFORM DEVELOPER

May 2020 - Aug 2020 | Geneva, Switzerland

- **Lead the reputation ranking team**, fixed 3 bugs involved in graphs, asynchronous jobs, and leaderboard rankings.
- Successfully migrated over **600 attributes** involving complex relationships and normalised the new database effectively.
- **Documented** the newly launched Automatic grader from scratch and created and revamped the Flatland RL website.
- **Created** paper trail versionings for entities that change frequently over time to avoid data loss and cron jobs to update the leaderboard based on the current performances using Sidekiq.

### SERC, IIIT-H | R&D INTERN

Feb 2020 - Jul 2020 | Hyderabad

- Project SIREN, achieved funding from the Department of Science and Technology, India, **advised by Dr. Raghu Reddy** and involved development of RL crawlers in a team which extracts **60,000 documents in 322 queries**.
- Achieved **94% accuracy** on spam filter based email classifier and provided assistance on tech stacks to members of the lab.

## PROJECTS

- **Indira Gandhi Center for Atomic Research** : Currently working on simulating an oxygen concentration instrument under EIG Section head.
- **Job-Match** : Job Matching App (LinkedIn clone) made using MERN stack with extensive features and job emailing and RBAC.
- **Genesis** : Extensible and Scalable Genetic Algorithm library in Python tested on high-order TSP nodes.
- **HCDBMS**: Hotel chain database management system with Python CLI interface with extensive functional requirements.
- **RegtoReg** Designing finite optimised automaton from regular expressions, and converting them back into regular expressions.
- **Brick Breaker** Classic Brick Breaker arcade game re-written without any external libraries (except numpy, colorama)