AMOKH VARMA

ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech and M.Tech in Mathematics & Computing	Indian Institute of Technology, Delhi	9.171
2018	CBSE	Vishwa Bharati Public School, Noida	95.4%
2016	CBSE	Vishwa Bharati Public School, Noida	10

PROJECTS

• **Multi Agent Intelligent System Analysis :** (Professor Leandro Marcolino, Lancaster University) [2020-]
- Created **AdLeap-MAS** - a novel framework focused on the implementation and simulation of reasoning domains, facilitating the collaborative and adversarial approaches aimed at ad-hoc environment learning and planning, through pre-written implementations and reusable API.
- Worked on formulating improved on-line agent parameter estimation methods and enforcing teamwork among them.
- **Journal Submission** : (Acceptance Pending) OEATA : Online-Estimator for Adhoc Task Allocation - AAMAS'20

• **Graph Based Attention for Reinforcement Learning:** (Prof. Sayan Ranu, Cse Dept) (Course Project) [2021]
- Developed a strategy to maximise reward in a graph based domain, using graph attention based **Deep Q-Networks**.
- Succesfully provided a visual explanation for importance of various states in a DQN, using the attention weights.

• **Privacy in Kalman Consensus Filter :** (Prof. Arpan Chattopadhyay, EE Dept.) [2020-]
- Proposed a novel setting of system **privacy** and **adversary attack** on kalman consensus filter based sensor networks.
- Designed and proved a **consensus algorithm** to successfully protect sensor information from a snooping adversary.

• **Playing Scotland Yard using DQNs and Planning** : (Prof Arpan Chattopadhyay, EE Dept.) (Course Project) [2020]
- Created a learning scheme to train a killer to evade detectives in the game *Scotland Yard*, using **monte carlo tree search**, DQNs and adversarial training.

• **Effect of Label Noise in Crowdsourced Learning to Rank :** (Prof. Srikanta Bedathur,Cse Dept)(Mini Project) [2020-21]
- Analysed and remediated the effect of **annotation error** created by crowd sourcing in learning to rank datasets.

• **Data Structures and Algorithms Implementation:** (Prof. Subodh Kumar, Cse Dept.) [2019]
- Created a Student Database Management System using **Linked Lists**, Customized **Iterators** and improved it later to include **Hash Tables** using **Binary Tree** Separate Chaining and Open Addressing using linear probing to avoid collision.
- Developed a **Thread Safe** Buying and Selling platform to facilitate multi-party synchronous access using Java Threads.
- Implemented an interactive job scheduler using **Red Black Trees, Tries and Binary Heaps** and a Graph Algorithm based approach to perform various shifting and analysing operations on triangles located in the 3-dimensional space.

INTERNSHIPS

• **IBM Research, Delhi** : *Data Sampling using Reinforcement Learning (RL)* [2021]
- Implemented policy gradient based RL strategies to choose the best model agnostic sampling from a class imbalanced dataset.
- Created an easily extendable pipeline to clean data using Data Readiness Toolkit by IBM and the above sampling procedure.

• **PIXEL AI, Hyderabad** : *Computer Vision Intern* [2020]
- *Worked with a team of 2 peope to develop Computer Vision and Deep Learning models and deployed them as a UI*
- **Project 1:** Developed deep **transfer Learning** models to predict different diseases from Retinal Images, created API end points for them, performed Postman testing and created docker containers for the same.
- **Project 2:** Trained Vanilla & **Variational Convolutional Autoencoder** models on retinal images to serve as dimension reduction method for new models and to generate new data to account for data shortage and data imbalance.

SCHOLASTIC ACHIEVEMENTS

• **Merit-Scholarship Award:** Received cash prize and certificate for being among top 7% students in the college. [2019]
• **Department Change:** From Electrical Engineering by virtue of excellent performance among 900+ students. [2019]
• **Subject Topper 12th Boards:** Secured highest score in Maths(100), Physics(98) and Computer Science(98). [2018]
• **KVPY Scholar:** Selected among 800+ students after rigorous 2-tier process as KVPY scholar by IISc, Bangalore. [2016]

TECHNICAL SKILLS

• **Languages** : C++, Python, Java, bash, MATLAB **Python Libraries** : *Data Science* : tensorflow, keras, pytorch, sci-kit learn, OpenCV, NLTK **Project Design Skills** : Version Control (Git), dockers, Postman, FastAPI, linux command line tools

Disclaimer: All the information on this page is entered by student.

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IIT COURSE

Degree	Institute	CGPA
B.Tech and M.Tech in Mathematics & Computing	Indian Institute of Technology, Delhi	9.171

COURSES DONE

Linear Algebra & Diffe. Equa., Calculus, Data Structures And Algorithms, Probability & Stochastic Pro., Summer Internship - I, Machine Intelligence& Learning, Linear Algebra & Applications, Analysis &design Of Algorithms, Stochastic Control And Reinforcement Learning, Mini Project, Spl. Topics In Database Syst., Detection & Estimation Theory, Data Mining

QUALIFYING EXAM

- **Joint Entrance Examination (JEE) Advanced Rank:** 502 AIR

EXTRA CURRICULAR ACTIVITIES

- First(Indian Vocal), Mixtape '20 (October, 2020 - November, 2020)
- 2nd, Agaaz, Rendezvous'19 (October, 2019 - March, 2020)
- 2, Fresher's Mixtape (November, 2018)
- 3, Mehfil'19 (March, 2019)
- Runner up Batte of bands Nilgiri, Intra Hostel (July, 2018 - April, 2019)
- 4th, Swar, Rendezvous'19 (October, 2019 - March, 2020)
- 1st, Mixtape'19 (October, 2019 - April, 2020)

POSITIONS OF RESPONSIBILITY

- Director, Mridang 2020-21, Director, Mridang (March, 2020 - March, 2021)
- Music Club Representative Nilgiri, Hostel (May, 2019 - April, 2020)

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