



Advaita Mallik

Roll No. : 200101010

B.Tech Major - Computer Science and Engineering

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology, Guwahati	7.35 (Ongoing)	2020-Present
Senior Secondary	Sri Kumaran Children's Home, Bangalore (CBSE)	96.4%	2020
Secondary	Sri Kumaran Children's Home, Bangalore (CBSE)	93%	2018

EXPERIENCE AND PROJECTS

- **Research Intern** May. 2022 - Aug. 2022
Professor John Jose, Multicore Architecture and Systems Lab, IIT Guwahati
 - Working on a method to improve Trojan Detection in Network-on-Chip (**NoC**) by exploring alternate Trust Based Algorithms.
 - Designing a new Anonymous Routing Technique for better security features in **NoCs**.
 - Designed an improved version of Lightweight Anonymous routing in **NoCs**.
- **Moisture sensing smart plant watering system** Aug. 2022
Professor Manas Khatua, IIT Guwahati rb.gy/u6pd90
 - Used a NodeMCU and humidity sensors to gather data about atmospheric moisture.
 - Created a phone app using Blynk to display the data.
 - Wrote a script in **Javascript** to synchronize the sensor readings and the app by uploading the data onto a database.
- **Mini Shell** Sep. 2021
Systems Programming Lab Project rb.gy/ofdlyi
 - Created an application using **C++** to emulate the working of the Bash shell present in UNIX Machines.
 - The application implements the majority of common UNIX shell commands and possesses pipelining capabilities.
- **Tic-Tac-Toe** Oct. 2021
Systems Programming Lab Project rb.gy/nufhtq
 - Implemented the popular game in **Python** using the **Minimax** algorithm to find the optimal move.
 - Applied **alpha-beta pruning** to reduce the search time complexity.
- **Graph Neural Networks** Oct. 2022 - Present
AI and ML Research Project
 - Studying **Graph Neural Networks** in an attempt to understand its uses and power.
 - Attempting to simplify and optimize existing GNN algorithms in order to run those on edge devices.

ACHIEVEMENTS

- **Joint Entrance Examination (Advanced)**: Obtained a rank of 561 of the total 1,60,000+ students. 2020
- **Joint Entrance Examination (Main)**: Obtained 99.892 percentile among more than 10.23+ lakh students. 2020
- **KVPY 2018**: Obtained the prestigious National Research Fellowship Scholarship by securing a rank of 172. Secured a provisional seat at IISc Bangalore for being in the top 200 in the country. 2018
- **KVPY 2019**: Obtained the prestigious National research fellowship scholarship by securing a rank of 362. 2019
- **InChO 2020**: Qualified for Indian National Chemistry Olympiad on the basis of NSEC - 2019 performance, Was in top 800 students selected from 49644 candidates. 2020
- **NGSE (Main) 2018**: Was one of the few students in the entire country to have achieved a 100 percentile 2018
- **IAYP 2018**: Silver level in the International Award for Young People a.k.a the Duke of Edinburgh Award. 2018
- **Infosys Catch Them Young**: Was among the 40 students selected from all across the country. 2016

COURSEWORK

- **Computer Science**: Data Structures and Algorithms (Theory and Lab), Systems Administration, Theory of Computing, Database Management Systems (Theory and Lab), Computer Architecture and Organisation, Design and Analysis of Algorithms, Operating Systems, Computer Networks
- **Mathematics**: Linear Algebra, Basic Calculus, Discrete Maths, Probability & Random Processes, Optimization

TECHNICAL SKILLS

- **Programming**: Python, C/C++, Verilog*
- **Database management**: MySQL
- **MLAI**: PyTorch, Numpy, Keras, TF2
- **Operating System**: Windows, Linux
- **Miscellaneous**: \LaTeX *, gem5

CERTIFICATIONS

* Elementary Proficiency

- **Deep Neural Networks**: Completed a 4-week course, conducted by DeepLearning.ai, instructed by Prof. Andrew Ng
- **Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization**: Completed a 3-week course, conducted by DeepLearning.ai, instructed by Prof. Andrew Ng