



Aditya Aggarwal

Bachelor of Technology
in Computer Science & Engineering
Indian Institute Of Technology, Ropar

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EDUCATION

Degree	Institute/Board	CGPA/Percentage	Year
Bachelor of Technology	Indian Institute of Technology, Ropar	9.24 (Institute Rank-2)	2020-2024
Senior Secondary	Central Board of Secondary Education, Delhi	97%	2020
Secondary	Central Board of Secondary Education, Delhi	93.8%	2018

ACADEMIC ACHIEVEMENTS & SCHOLARSHIPS

- **Awarded Reliance Foundation Scholarship in Artificial Intelligence & Computer Sciences 2021** for exceptional academic performance and leadership qualities (**1 among 39 IITians across India**)
- Secured **All India Rank 1353 in JEE Advanced 2020** (Among top **0.9%** in the country)
- Scored **406/450 Marks in BITSAT** | **Ranked in Top 100** (Top **0.1%**) out of 100K+ students
- National **Top 1%** in **National Standard Examination in Junior Science**
- Scored **97%** in the Central Board of Secondary Education (CBSE) Class XII Board Exams in 2019-20

EXPERIENCE

- **Indian Institute of Information Technology** December 2021 - February 2022
Machine Learning Research Intern under Prof. Sonali Agarwal Allahabad
 - Analysed different techniques for time series forecasting of ECG Signals
 - Proposed a novel approach using LSTMs to forecast ECG signals with very low mean absolute error of 0.0012mV
 - Utilized Keras & Tensorflow to develop the LSTM model and Scikit-Multiflow for drift detection to ensure real time model performance improvement
 - Research Paper Manuscript Compilation is in Progress
- **IoTioT.in** November 2021 - January 2022
Computer Vision Intern Pune
 - Developed Computer Vision Models for Real World Problems namely Biological Cell Identification & Vernacular Text Recognition from Images
 - Utilized Tensorflow Lite to ensure minimal model size for deployment on devices with low computation power.
 - Utilized OpenCV extensively to preprocess the images before feeding into the model.
 - The text identification model was put into deployment to aid blind people as a part of larger project

PROJECTS

- **Online Coding Platform** May 2022 - July 2022
Tech Stack Used: DJANGO
 - Built a website (Online Judge) which can remote run the code submitted by the user and display if the code is correct/wrong.
 - Utilized **Sanboxing & Docker** to run code in a safe and isolated environment.
 - Used **Google OAuth2.0** to allow users to sign in addition to with their Email & Password
- **Image Compression Using Quad Tree** October 2021 - November 2021
Tech Stack Used: C++
 - Developed a Image Compression Tool using C++ based on Quad Tree as the underlying Data Structure
 - Utilised OpenCV Library to convert image into RGB Matrix and mapped each matrix element as a Quad Tree Node.
 - To reduce the size of image, Quad Tree nodes were merged if the variance in their intensities was below a threshold value which reduced the amount of data to be stored. Achieved an average compression rate of 32%.
 - Earned the highest grade in Project and A+ grade in the course

TECHNICAL SKILLS

- **Programming Languages:** C/C++, Python, Java, SQL, Perl, Verilog(HDL), JavaScript, CSS, MATLAB
- **Tools:** Docker, Git, WSL (Windows Subsystem for Linux), SQL Workbench, MS Excel, MS PowerPoint, LAAMPS
- **Machine Learning Tools:** Keras, TensorFlow, Scikit Learn, Pandas, Matplotlib, Seaborn, Numpy

KEY COURSES TAKEN

- **Computer Science:** Data Structure & Algorithms, Digital Logic Design, Computer Architecture, Programming Paradigms & Pragmatics
- **Mathematics:** Calculus, Differential Equations, Linear Algebra, Probability & Statistics, Discrete Mathematics

EXTRA CURRICULAR ACTIVITIES

- **Winner of Best Project** in First Lego League (FLL)-A National-level Robotics Competition
- **Quora Top Writer** on Guidance for JEE; Authored content with cumulative views of over 500K
- Volunteer at **Pechaan Ek Safar (NGO) in IIT Ropar**, involved in teaching young impoverished kids