



# 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	<b>9.24 (Institute Rank-2)</b>	2024(Expected)
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)
- Awarded the **Institute Academic Prize** for academic excellence in all semesters
- 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 recognition 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 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