# ANURAG AMCHI

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## EDUCATION

**Indian Institute of Technology Ropar**                                                                                     2022 - 2026
Bachelor of Technology in **Mathematics and Computing** | CGPA: 6.46(till 4th sem)                        Rupnagar, Punjab
Key Courses: Data Structures and Algorithms, Data Science and Machine Learning, Analysis and Design of Algorithm, Theory of Computation, Discrete Math, Linear Algebra, Computational Algebra, Digital Logic and Design, Calculus.

## EXPERIENCE

**Borde Inc. USA**                                                                                      September 2023 - March 2024
Machine Learning Intern                                                                                           **Certificate** | Remote
- Used tech stack and tools: Python, Bash, Azure, Git, Dagster.
- Wrote new bash scripts and optimised the old ones to automate annotations and segmentation to improve the accuracy of the assigned classes by **2-5%** and **overall accuracy** by **0.71%**.
- Trained efficient models using **Yolo-v5** on datasets containing more than **150k images** of almonds.

## PROJECTS

**Finance Tracker**                                                                                                    June 2024 - July 2024
MongoDB, Express, React, Node.js, JWT Authentication                                                                     **GitHub**
- Made a full stack project to keep detailed track of finances with **email reminders** and **visual analytics**.
- Implemented **JWT authentication** for secure user access and data protection.
- Enabled expense tracking, budgeting, and interactive data visualization features.

**Collision Detection using Quadtree**                                                                               May 2024 - June 2024
HTML, CSS, JavaScript                                                                                            **Live Link** | **GitHub**
- Made a fully functional visual website about the Quadtree data structure with features like construction, insertion, searching, deletion, query searching and collision detection for better analysis.
- Optimized collision detection using the Quadtree data structure, resulting in faster object interaction within a 2D environment by reducing the **time complexity** from traditional $O(n^2)$ to $O(n\log(n))$.
- Increased the performance frame rate from **5 fps** to **40 fps** during collision of **10k points**.

**Movie Recommender**                                                                                                              May 2024
Python, Machine Learning                                                                                                         **GitHub**
- Built a recommender system to recommend 5 movies when a user inputs a movie or rates several movies.
- Combined collaborative filtering and content based algorithm on a dataset containing over **10k movies** rated by over **1k users** with total **100k ratings**.
- Implemented algorithms to detect and account for biased ratings and insufficient data to minimize their effect and boosted the model **accuracy** by **4%**.

## TECHNICAL SKILLS

**Languages**: C/C++, Python, JavaScript, MATLAB, HTML, CSS
**Frameworks**/**Libraries**: React, Express.js, Node.js, Jupyter, TensorFlow, Pandas, Numpy, Matplotlib.
**Database**/**OS**/**Tools**: MongoDB, Git, Linux.

## POSITION OF RESPONSIBILITY

**Guitar Coordinator**, Music Club, IIT Ropar                                                                      June 2023 - June 2024
**Event Management**, Zeitgeist, Techno-Cultural Fest                                                                         March 2023

## MISCELLANEOUS

**Rank 542,** ICPC Prelims                                                                                                              2023
**Codeforces,** Max Rating: 1407(Specialist)                                                                                            2023
**CodeChef,** Max Rating: 1684(3 star rating)                                                                                           2023
**Inter IIT Cult-Meet 6.0,** Secured 6th position in Pair-on-stage competition among 23 IITs.                                           2023
**NTSE Scholar,** Granted scholarship to top 2000 students of stage 2 by NCERT every year till their study period.                      2020
**Anandoram Baruah Award,** Awarded by Secondary Education Board of Assam to top meritorious students.                                   2020