ANURAG AMCHI

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EDUCATION

Indian Institute of Technology Ropar   2022 - 2026
Bachelor of Technology in **Mathematics and Computing**   Rupnagar, Punjab
Key Courses: Data Structures and Algorithms, Data Science, Machine Learning, Optimization Techniques, Financial Derivatives pricing, Analysis and Design of Algorithms, Theory of Computation, Computational Algebra, Digital Logic and Design, Discrete Math, Linear Algebra, Calculus.

EXPERIENCE

Borde Inc. USA   September 2023 - March 2024
Machine Learning Intern | Python, Bash, Azure, Git, Dagster   **Certificate** | Remote
- Helped the team to automate annotations and segmentation to improve the accuracy of various assigned classes.
- Trained efficient models using **Yolo-v5** on datasets containing more than **150k images** of almonds.

PROJECTS

Real Time Chat App   September 2024 - October 2024
Socket.IO, MongoDB, Express, React, Node.js, JWT Authentication   **Live Link** | **GitHub**
- Built a client-server web application that enables users to communicate through **real-time** messaging.
- Used **REST APIs** and **WebSockets** to ensure scalable and efficient real-time communication.
- Used **Socket.IO** for managing WebSocket connections.

Finance Tracker   June 2024 - July 2024
MongoDB, Express, React, Node.js, JWT Authentication   **Live Link** | **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.
- Implemented collision detection using the Quadtree data structure, 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**.

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: 1685(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