

# Aryan

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## Education

**Dr. B.R. Ambedkar National Institute of Technology, Jalandhar**

**Nov 2022 - Present**

*Bachelor of Technology in Computer Science and Engineering — CGPA : 8.26/10*

**Vaish Public School, Rohtak, Haryana, India**

**June 2022**

*CBSE (CLASS XII) , Aggregate : 94%*

## Skills

**Programming** C++, C, Java

**Web Dev.** HTML, CSS, JavaScript

**Database** MySQL

**Data Structures & Algorithms** C++, C, Java

**Operating Systems** Linux, Ubuntu

**Cloud & Tools** Azure (basic), Vercel, Git

## Projects

### ML Visualizer

**Live** [GitHub Repo.](#)

*Technologies: React.js, Vite, Plotly.js, JavaScript*

- ML Visualizer is an interactive web application designed to help users intuitively understand how popular machine learning algorithms work through real-time visualizations, provide step-by-step demonstrations of multiple ML algorithms, including K-Means Clustering, Hierarchical Clustering, FP-Growth, and Apriori Association Rule Mining.
- Users can generate datasets and see how clustering or pattern-mining algorithms process the data.
- Provides real-time interactive charts powered by Plotly.js to visualize each step — for example, observing centroid shifts in K-Means or cluster merges in Hierarchical Clustering.
- Allows parameter adjustments such as number of clusters, support/confidence thresholds, or dataset size, with instant updates to visual outputs.
- Ensures seamless use on both mobile and desktop with a mobile-first responsive UI.

### Ark Code Editor

**Live** [GitHub Repo.](#)

*Technologies: Next.js, React, Clerk, Convex, Multiple Compilers*

- Developed a full-stack online code editor and compiler supporting multiple languages including C, C++, Java, Go, and Rust.
- Integrated live code execution like GDB and language-specific compilers, providing an IDE-like experience directly in the browser.
- Implemented a premium subscription model for advanced languages like Rust and Go, enabling access control and usage tracking.
- Built an interactive user dashboard for tracking saved code snippets, execution history, and personalized usage analytics.
- Integrated Clerk for secure user authentication and Convex for efficient serverless data management and real-time updates.

### Social Media Simulation with OOPS in C++

**GitHub Repo.**

*Technologies: C++, OOP, File Handling*

- A console-based simulation of a simple social media platform built entirely in C++ to demonstrate practical object-oriented programming.
- Implements user account creation with username and password authentication, storing credentials securely via file handling.
- Enables logged-in users to create posts and view a personalized timeline showing all their posts.
- Uses multiple C++ classes (User, Post, SocialMedia) to handle user management, content creation, and file operations.
- Demonstrates real-world application of classes, methods, encapsulation, and file I/O by persisting data in a text file (record.txt).

## Coursework

- Data Structures and Algorithms
- Database Management Systems
- Machine Learning
- Design and Analysis of Algorithms
- Object Oriented Programming
- Computer Networks