

HARIHAR BAJPAI

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EDUCATION

Vellore Institute of Technology

B.Tech in Computer Science Engineering; CGPA: 8.21

May 2026

St. Mary's Inter College

12th Standard; 81.2%

July 2022

TECHNICAL SKILLS

Programming Languages: C, C++, Java, Python, SQL, TypeScript, JavaScript

Frontend Development: HTML5, CSS3, React.js, Tailwind CSS, shadcn/ui

Backend Development: Node.js, Express.js, RESTful API Development, WebSockets, JSON Web Token (JWT) Authentication

Databases: MySQL, MongoDB, Amazon DynamoDB

Cloud & DevOps: Amazon Web Services (AWS EC2), Render, Environment Variable Management, Deployment Automation

Developer Tools: Git, Postman, Chart.js, Cloudinary, Google Sheets

Core Skills: Responsive Web Design, Performance Optimization, System Scalability, Data Modeling

WORK EXPERIENCE

Freelance Software Engineer — GICPL Cricket Analytics Platform

Jan 2025 – Present

- Attained a cricket analytics platform for **200+ users** using the **MERN stack (MongoDB, Express.js, React, Node.js)**
- Implemented real-time scoring with **WebSocket**, improving data refresh speed by **40%** compared to polling-based methods
- Deployed hybrid storage with **MongoDB** (content) and **Amazon DynamoDB** (match stats); achieved single-digit ms latency for live queries
- Executed a role-based **admin dashboard** with **JWT authentication** to manage teams, players, schedules, and announcements

PROJECTS

ProHireHub — Job Portal (MERN Stack)

March 2025

- Launched a MERN job portal with **REST APIs** and **JWT (HS256)** authentication; optimized MongoDB queries to cut load time by **70%** and onboarded **300+** users in week 1
- Developed responsive UI with **React 18**, **Tailwind CSS**, and **shadcn/ui**; accomplished **90%+** cross-browser compatibility and high Lighthouse scores
- Integrated **Google Gemini API** chatbot; resolved **80%** of support queries and reduced service workload by **60%**
- Built advanced job search using **MongoDB text indexes**, filters, and aggregation pipelines; delivered typical query responses in **< 1 second**

BitCrush — C++ File Compression Tool (DSA)

July 2025

- Deployed **Huffman Coding** with `priority_queue` to compress 8-bit data; reduced file size by **40–60%** on benchmarks
- Developed bit-level encoder/decoder with canonical codes and streaming I/O; ensured lossless compression and decompression integrity
- Optimized memory with compact node structs and iterative traversals; secured build time $\mathcal{O}(n \log \sigma)$ and encode/decode $\mathcal{O}(n)$
- Packaged as modular **C++ CLI**; separated parser, coder, and I/O layers for scalability and integration in pipelines

EXTRACURRICULAR

Taekwondo

State Level Silver Medalist

Badminton

District Level Champion

BashCraft Club, VIT Bhopal

Tech Lead

Cricket Tournaments

Played and Managed Various Local Events

ADDITIONAL INFORMATION

Languages: English (Fluent), Hindi (Fluent)

Skills: Creative Thinking, Analytical Reasoning, Communication, Teamwork, Leadership, Conflict Resolution, Patience, Listening