

RAJ KUMAR

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EDUCATION

Indian Institute of Information Technology, Kota

2020 – 2024

Bachelor of Technology in Computer Science and Engineering

Army Public School, Ranchi

2018 – 2019

XII Boards, Central Board of Secondary Education

SKILLS

Languages: JavaScript, TypeScript, HTML/CSS, C/C++, SQL, Python & Svelte, Rust.

Front-end Technologies: Svelte/Sveltekit, React, React Native, Expo, Nextjs, Bootstrap, THREE.js & Tailwind.

Back-end Technologies: Flask, FastAPI, REST APIs, SQLAlchemy, Click CLI, Blender API, Redis, SQLite, Node.js, Express.js, MySQL, Azure, PostgreSQL & MongoDB.

Developer Tools: VS Code, Cursor, Copilot, Chat GPT, Bash, Docker, Postman, Chrome Dev Tools, Git, GitHub & Linux.

Coursework: Data Structures, Algorithms, DBMS, Operating System, Computer Networks & OOPS.

Soft Skills: Communication, Problem-Solving & Flexibility.

EXPERIENCE

EmptyCup

Jan 2024 - Present

Software Engineer

Bangalore (Remote)

- Designed and implemented a robust **data migration pipeline** using **SQLite**, **MySQL**, and **Click CLI**, ensuring schema transformations and maintaining **data integrity**.
- Built and maintained critical **CLI tools** with **Python (Click)** to automate developer workflows and support backend operations.
- Optimized complex **3D scene rendering** with **THREE.js** and **Blender API**, reducing system load by over **50%** and increasing user engagement by **40%**.
- Developed a modular architecture for reusable components and scalable pipelines for **3D model processing** using **Azure VMs**, **Blender API**, and **Python RQ**, boosting workflow efficiency by **80%**.
- Enhanced frontend performance and reliability by reducing page load times by **80%**, adding **auto-save**, rebuilding **error logging** with **Google Chat webhooks**, and improving **UI/UX**.

PROJECTS

High-Performance Solana DEX Client

Nov 2025

- Engineered a low-latency **Rust** trading engine with **UDP** communication, utilizing background **blockhash caching** to cut RPC overhead by **20-50ms**.
- Integrated **Meteora DAMM v2** and **Orca** for automated swaps, using a **fire-and-forget** strategy to maximize transaction propagation speed.

Personalized Horoscope API

Oct 2025

- Architected a scalable **TypeScript** API with **Node.js** and **PostgreSQL**, utilizing **Sequelize ORM** for efficient user data and history management.
- Secured endpoints via **JWT** and IP-based **rate limiting**, while integrating **Swagger** for automated documentation and request logging.

Crypto Sentiment Analysis Engine

Sep 2025

- Built a real-time sentiment engine in **Python** analyzing Reddit and Twitter data using an enhanced **VADER** NLP model with custom entity recognition.
- Deployed a **FastAPI** backend to serve insights and implemented a **backtesting engine** to validate trading strategies against historical market data.

WeDraw

Jan 2023

- Implemented real-time video conferencing for up to 8 users via **Huddle01 API** and **WebRTC**, integrated into a custom **React** frontend.
- Built a synchronized collaborative canvas using **WebSockets**, enabling low-latency interactive drawing and remote user collaboration.

ACHIEVEMENTS & CERTIFICATES

- LNMHACKS 5.0 Winners**: Won first place in huddle01 track among 200 teams.
- React - The Complete Guide**: Udemy course certification.
- DSA Problem Solving**: Solved more than 400+ DSA problems on different coding platforms.

Jan 2023