

Harsh Agrawal

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SUMMARY

Full-stack developer who owns applications end to end, from data model through API to interface. Work spans authentication and access control, real-time collaboration, and analytics-heavy products.

TECHNICAL SKILLS

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

Frontend: React, Next.js, Tailwind CSS

Backend: Node.js, Hono, Express, Prisma, REST APIs, WebSockets (Socket.io), OAuth 2.0

Databases: PostgreSQL, ClickHouse, MongoDB, Convex

Tools: Git, Postman, Vercel

EXPERIENCE

Netision Technology

Associate Software Engineer

May 2026 - Aug 2026

Software Engineer Intern

Feb 2026 - Apr 2026

- Built a monitoring dashboard in React and Next.js spanning **21 pages across 7 analytics domains** — cost, token usage, agent performance, and response quality — surfacing per-agent spend and failures in one place.
- Developed a centralized API service in Node.js and Hono serving the whole analytics frontend from one shared query layer, and converted sequential ClickHouse queries to concurrent execution, cutting response times **5-7x**.
- Engineered **Microsoft Entra ID** single sign-on and delegated Graph API access across Outlook, Teams, OneDrive, and Power BI, letting AI agents act on company data with the signed-in user's own permissions.
- Designed an internal access-governance platform on **31 row-level security policies, 22 stored procedures and 15 triggers**, with an append-only audit log written by triggers, and expiries synthesized at read time rather than by a scheduled job.
- Technologies: TypeScript, Next.js, React, Hono, ClickHouse, PostgreSQL, Prisma, Convex

Centre for Development of Advanced Computing (C-DAC)

Project Intern

Mar 2025 - Sep 2025

- Fine-tuned a DeBERTa-v3 transformer on 42,360 labeled C/C++ loops to classify OpenMP parallelizability, achieving **81% accuracy** and 0.77 F1 on a 5,296-loop held-out test set.
- Implemented the training pipeline — preprocessing, 512-token tokenization, per-epoch evaluation, best-checkpoint selection — and **tested generalization** across 1,617 loops from NAS Parallel Benchmarks, PolyBench and SPEC OMP.
- Diagnosed a distribution-shift failure that headline accuracy concealed: on SPEC OMP the model scored **82.5% accuracy** yet fell below the **86.4% majority-class baseline** — so every suite was scored against its own baseline.
- Technologies: Python, PyTorch, Hugging Face Transformers, scikit-learn, NumPy, Matplotlib | [GitHub](#) | [Hugging Face](#)

PROJECTS

PeerScript | React, Node.js, Express, Socket.io, Yjs, MongoDB, JWT

[Live Demo](#) | [GitHub](#)

- Built a real-time collaborative code editor where multiple users edit HTML, CSS, and JavaScript in the same room, using **Yjs CRDTs** over Socket.io so concurrent edits merge cleanly instead of overwriting each other.
- Wrote a sync server that holds an **authoritative document per room**, relays live cursor positions between members, and persists to MongoDB on a debounced write so sessions restore when users rejoin.
- Secured rooms with JWT authentication on both REST and WebSocket connections, and rendered the live preview in a **sandboxed iframe** to isolate user-run JavaScript.
- Code-split all 7 routes so the 246 KB CodeMirror and Yjs editor bundle downloads only when a room is opened, keeping the landing page at **109 KB** of gzipped JavaScript.

EDUCATION

Indian Institute of Information Technology Sonapat

B.Tech in Computer Science & Engineering — CGPA: 8.99/10

2022 - 2026

Sonapat, Haryana