

HARSH VARDHAN SINGH

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EDUCATION

KIET Group of Institutions

Bachelor of Technology in Computer Science and Information Technology

Delhi NCR, Ghaziabad

Sep. 2022 – July 2026

EXPERIENCE

Software Developer UnderAI

Oct 2025 – Present

- Built a multi-agent risk intelligence system performing live industry research, document parsing, and hazard analysis enabling clients to upsell relevant coverages by **50%+** and accelerating deal closure.
- Architected an AI document analysis pipeline ingesting and correlating historical policy data, exposure documents, and inspection reports to extract structured business-critical information.
- Built a multi-stage agent orchestration workflow using **LangChain** and **LangGraph** for document understanding, rule-based reasoning, and decision synthesis.
- Designed an AI-powered RFQ automation system with an interactive spreadsheet-style playground, cutting manual RFQ creation time from **~140 hours to ~15 minutes**.

PROJECTS

Tempo | TypeScript, WebGPU, Gemini, FFmpeg, Computer Vision, Redis, PostgreSQL 2026

GitHub

- Built an autonomous AI video-editing system using Gemini and 26 typed tools that analyzes raw media, constructs an edit plan, mutates timelines, validates rendered output, and performs iterative visual correction.
- Developed a hardware-accelerated WebGPU/WGSL compositor supporting masks, blend modes, chroma keying, LUTs, color grading, motion paths, and geometric transitions, enabling GPU-accelerated real-time video composition directly in the browser.
- Designed a hybrid execution architecture spanning browser WebGPU and server-side FFmpeg/Chromium rendering with BullMQ, Redis, PostgreSQL, and Socket.IO for asynchronous jobs, persistent state, and real-time export.

Ocular | Next.js, TypeScript, Python, PyMuPDF, Turborepo 2025

GitHub

- Built a single-pass dual-representation PDF pipeline using PyMuPDF — extracting LLM-ready markdown and a word-level position index simultaneously, eliminating a second LLM call for grounding.
- Engineered a 4-tier deterministic highlight resolver (exact → case-insensitive → punctuation-agnostic → sliding window at 60% token threshold) to map AI paraphrases back to exact PDF bounding boxes.
- Anchored LLM input text and resolver search space to the same character-offset source of truth, ensuring AI-generated quotes always resolve to correct page coordinates regardless of paraphrasing. +

TECHNICAL SKILLS

Languages: TypeScript, JavaScript (ES6+), C++, HTML5, CSS3

Databases: SQL (PostgreSQL), NoSQL (MongoDB)

Frameworks & Libraries: React.js, Next.js, Node.js, Express.js, Tailwind CSS, REST API, LangChain, LangGraph

Developer Tools: Git, Docker, AWS (S3, EC2, Lambda), Supabase, Vercel, Google APIs (Gmail, Calendar), VS Code

CERTIFICATIONS

Full-Stack Web Development (100xDevs, 2023) Credential — Covered: TypeScript, React, Next.js, Node.js, Express, MongoDB, REST, GraphQL, Docker, CI/CD, System Design

SQL Skills Test (TestDome, 2025) Credential — Tested complex SQL queries, joins, indexing, data manipulation.

LEADERSHIP & EXTRACURRICULAR

- Delivered a technical orientation session on Full-Stack Development and Software Engineering fundamentals to 2000+ B.Tech and MCA students, helping them kickstart careers in tech.