

# Harsh Pratap Singh

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## WORK EXPERIENCE

**Utopian Dreams Pvt. Ltd. (DistrictD)**, Noida, India

*Full-Stack & AI Engineer*

*Software Developer Intern*

*Aug 2025 – Present*

*Feb 2025 – Aug 2025*

- Architected the **NSE Intelligence Pipeline**, a **5-stage async engine** that ingests every NSE/SEBI corporate filing, including scanned and low-quality PDFs, and converts ~1,000 documents daily into clean structured data at under avg 40s each.
- Designed a **PageQualityScorer** that sends expensive **AI vision models** only to pages where normal text extraction fails, the pipeline's main cost lever, while holding full announcement coverage.
- Engineered **schema validation** with automatic repair of malformed AI output, plus **table reassembly** across page boundaries, so downstream products receive trustworthy data without manual review.
- Built **cross-repo referencing** for **DD-Cortex**, our in-house AI coding agent, exposing internal repositories through **MCP servers** that query **bare git mirrors** directly, cutting file reads to milliseconds and zero disk instead of gigabyte clones.
- Hardened the agent with **deterministic guardrails** around a small **self-hosted LLM**, auto-correcting misrouted tool calls and enforcing a single **allowlist access gate**, so engineers can work from another team's real code without KT sessions.
- Implemented a **deterministic scope resolver** for **NEXAI**, **NEXedge's** conversational portfolio agent, matching self keywords, investor IDs, and fuzzy member names in priority order so unambiguous report requests skip the LLM entirely.
- Developed the **multi-turn clarification flow** that asks which family members a report covers, resolves replies given as a name, number, or relationship like "my spouse", and detects when the user abandons the question to start a new request.
- Built the **Portfolio Management Module**, an in-browser **Excel editor** (Luckysheet), and a **TWRR widget** for **MS Capital**, delivering real-time P&L, sector allocation, benchmark attribution, and time-weighted return tracking.
- Shipped the **DD Stock Filter**, a **composable query engine** letting analysts stack AND/OR filters across financials, valuation, shareholding, liquidity, and price for every NSE/BSE listed company, with **saved screeners** and entry/exit alerts.
- Delivered features across client projects for **MS Capital**, **ICICI**, **Kotak**, **ORIM**, **NEXedge**, and in-house **DistrictD.co**, building modular **REST APIs** and third party integrations that improved data sync speed by 30% for 10K+ users.
- Automated scheduled **ingestion pipelines** for financial models, transaction data, and NAVs from OneDrive and added a centralized **error logging and monitoring** framework that cut debugging and issue resolution time by 30%.

## SKILLS

- **Languages:** Python, TypeScript, JavaScript, Go (Golang), C++, SQL, PL/pgSQL, HTML, CSS
- **AI/ML:** LLM integration (Anthropic, OpenAI), agentic systems & tool calling, VLM pipelines, MCP (Model Context Protocol) servers, RAG/CAG, embeddings & vector search, document AI & OCR, Pydantic schema enforcement
- **Frameworks/Libraries:** Node.JS, Express.JS, React.JS, Next.JS, asyncio, aiohttp, pymupdf4llm, Tailwind CSS
- **Databases:** PostgreSQL, MongoDB, MySQL, Qdrant (vector)
- **Cloud/Tools:** Git, GitHub, Gitea, Jenkins, BitBucket, Firebase, REST APIs, Postman
- **CS Fundamentals:** Data Structures & Algorithms, System Design, OOP, DBMS, Operating Systems, Computer Networks

## PROJECTS

**BizSuite** (GST-native ERP for businesses)

[\[Live\]](#) [\[GitHub\]](#)

- Built a modular business suite where **CRM**, **quotations**, **invoicing**, **inventory**, and **accounting** run as separate apps on one shared database, so a single sale flows from quote to invoice to stock movement to ledger entry with no duplicate data entry.
- Kept the books trustworthy by design: every invoice posts a balanced **double-entry journal** automatically, ledgers are **append-only** so corrections happen by reversal instead of editing, and all money is stored in whole paise to eliminate rounding errors.
- **Technologies:** TypeScript, Node.JS, Express.JS, React, PostgreSQL 16, Zod, Docker, Playwright

## EDUCATION

**Dr APJ Kalam Technical University**, Ghaziabad, India

Bachelor of Technology in Information Technology

*2021 – 2025*

*CGPA: 7.6*

## ACTIVITIES

- **Coordinator** of the college Fine Arts Society and member of the literary team; co-organized 10+ cultural events.
- Represented the **college football team** in zonal and district-level tournaments.