

Jatin Nasarwal

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Education

Indian Institute of Information Technology, Nagpur

Aug 2023 – June 2027

Bachelor of Technology - Computer Science

- **Relevant Coursework:** Data Structures and Algorithms, Object-Oriented Programming (OOP), Operating Systems, DBMS, Computer Networks, Cryptography and Network Security, Computer Architecture, Compilers, Distributed Systems, Scalable System Design

Projects

Quiz App - Full-Stack Quiz Platform

[Live](#) [GitHub Link](#)

- Developed a full-stack **MERN** (MongoDB, Express, React, Node.js) quiz platform using **object-oriented, modular architecture**, supporting **50+ concurrent users** taking timed quizzes with instant analytics.
- Implemented **JWT authentication** with bcrypt hashing and role-based access control, securing separate student and admin portals against unauthorized access.
- Engineered a timed quiz engine with **auto-submit**, configurable **negative marking**, and an answer review mode, processing **40+ quiz attempts** to date; delivered an admin **CRUD dashboard** with folder-based tagging and **NVIDIA API**-powered question auto-generation, cutting quiz-creation time by **90%**, deployed on **Vercel/Render** with **MongoDB Atlas**.

QuantBacktester - Algorithmic Trading Backtesting Platform

[Live](#) [GitHub Link](#)

- Architected a full-stack, **distributed algorithmic trading backtester** using **Next.js 14**, **FastAPI**, **Celery**, and **Redis**, offloading strategy evaluation to asynchronous distributed workers and cutting evaluation time by **60%**.
- Designed a **sandboxed Python execution engine** (AST validation, restricted namespaces) to safely execute user **Backtrader** strategies at scale on live OHLCV data, backed by a **PostgreSQL** caching layer that cut redundant API calls by **80%**.
- Created a quantitative analytics suite covering 8+ risk metrics (Sharpe, Sortino, Calmar, Max Drawdown) and a **1,000-path Monte Carlo simulation**, visualized via **Plotly.js** for fast, data-driven decision-making.

LearnSphere - An EdTech Platform

[Live](#) [GitHub Link](#)

- Built a scalable **REST** client-server system handling **1,000+ API requests/day** using **React.js**, **Node.js**, **Express.js**, and **MongoDB**, designed for low-latency, fault-tolerant access at scale.
- Enabled **OTP-based authentication**, reducing unauthorized access by **90%**; integrated **Razorpay** and **Cloudinary**, reliably handling **100+ uploads/day**.
- Optimized a custom video/PDF viewer with **300ms debounced search**, cutting page load latency by **35%** and improving overall system responsiveness.

Technical Skills

- **Languages:** C/C++, Python, JavaScript, Shell Scripting
- **Frontend:** HTML5, CSS3, React.js, Next.js, Tailwind CSS, RESTful APIs
- **Backend:** Node.js, Express.js, FastAPI, Flask, Authentication (JWT, OTP), Multi-Tiered System Design
- **Databases:** MongoDB, MySQL, PostgreSQL, SQL, Database Design
- **DevOps & Tools:** Git, GitHub Actions, Postman, Docker, Redis, Celery, Agile Development
- **Generative AI & Agentic AI:** RAG, GraphRAG, AI Agents, Multi-Agent Systems, Tool Calling, Prompt Engineering, Semantic Search, Hybrid Retrieval
- **LLM Frameworks:** LangChain, LangGraph, LlamaIndex

Positions of Responsibility

Dotslash Core Member – Corporate Relations

Aug 2024 – Aug 2025

- Reached out to **300+ brands** and secured sponsorships; organized multiple club competitions, coordinating cross-functional teams to deliver events on schedule.

Tantrafiesta – Public Relations Member

Aug 2024 – Oct 2024

- Promoted events and handled communication outreach as part of the PR team.

Achievements

- Secured **2nd place** in QuantQuest at TantraFiesta by designing algorithmic trading strategies, achieving a **34× simulated portfolio growth**.
- Advanced to the **semi-final round** of **Flipkart Grid 8.0**, a nationwide engineering and problem-solving challenge.
- Solved **600+ Data Structures and Algorithms problems** across **LeetCode**, **CodeChef**, and **GeeksforGeeks**, demonstrating strong command of arrays, trees, graphs, dynamic programming, greedy algorithms, and complexity analysis.