

PALLAVI SINHA

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EDUCATION

• Guru Gobind Singh Indraprastha University

B.Tech in Electronics and Communications, Minor in Machine Learning and Data Analytics

CGPA: 8.64

2021-2025

EXPERIENCE

• National Informatics Centre [🌐]

Intern

Jul 2024-Aug 2024

New Delhi

- Engineered a local development environment using **Docker & Docker Compose**, provisioning frontend, API, and MongoDB containers to streamline internal testing and reduce environment setup time from 15 minutes to **<2 minutes**.
- Redesigned the eShram CMS user interface using **React.js** and **TailwindCSS**, transforming a legacy PHP-based frontend into a responsive, mobile-first single-page application prototype.

PROJECTS

• BlogFlow: Full-Stack Blogging Platform

Tech-stack: Node.js, Express, MongoDB, Redis, JWT, Cloudinary, BCrypt, EJS



- Developed a full-stack blogging platform with secure JWT authentication, RESTful API architecture, bcrypt encryption, and session caching for 20+ active users.
- Integrated Cloudinary for cloud-based image storage and Redis for session persistence, enhancing scalability and reducing database load.
- Implemented Redis caching on API endpoints, reducing response time by 84%.

• Semantra - Medical Fact Verification System

Tech-stack: FastAPI, LangChain, Mistral 7B, Qdrant, Vector Embeddings (SPECTER2)



- Built RAG (Retrieval-Augmented Generation) pipeline processing medical claims and generating evidence-based reports with citations in under 30 seconds.
- Engineered semantic search system using Qdrant vector database and embedding models; integrated LangChain for LLM orchestration with Mistral 7B. Deployed with Github Actions CI/CD to prevent cold starts.

• PsyFer - Graphology Analysis Interface

Tech-stack: React.js, TailwindCSS, Jest



- Developed responsive React application for AI-powered handwriting analysis, optimizing component rendering to improve initial load performance
- Implemented comprehensive test coverage using Jest and React Testing Library with 10+ unit tests; collaborated cross-functionally using Figma for design iteration.

SKILLS

- **Programming Languages:** C/C++, JavaScript
- **Web Technologies:** Nodejs, Express, REST APIs, OAuth2/JWT, React.js, TailwindCSS, HTML/CSS/JS
- **Database Systems:** Mongoose, MongoDB, Redis, MySQL
- **DevOps, Deployment & Version Control:** Docker, Git Versioning, Render, Netlify, Vercel

ACHIEVEMENTS

- **BNY Code Divas 2025** - Round 1 Qualifier, selected among 92k + participants **Feb. 2025**
- **Smart India Hackathon Winner** - Developed NyAI, a legal documentation assistant simplifying legal jargon for individuals and small businesses. Led UI/UX design lifecycle. **Dec. 2023**
- **Code4Cause Hackathon Runner Up** - Led a 6-member backend team; coordinated web development and integration under 36-hour constraint. **Oct. 2023**