

Piyush Rana

I build full-stack applications, design user experiences, and engineer scalable systems. My work spans frontend design, backend development, and product architecture, allowing me to take ideas from concept to implementation. I enjoy solving complex problems, building practical software, and continuously expanding my expertise in software engineering.

Technical Skills

Language: Python, JavaScript / TypeScript, HTML, PHP

Frontend Frameworks: React, Tailwind Css, NextJs, jQuery, Electron Js (Multiplatform desktop apps)

Backend Frameworks: Express Js, Django, FastAPI, Supabase (BaaS), Node Js

Databases / ORMs: Sqlite3, PostgreSQL, MongoDB, MySQL, Supabase, Redis, Drizzle, Prisma

Tools & DevOps: Git, GitHub, Figma, Canva, Docker, GitHub Workflows

OS Platforms: Windows, Linux (Debian)

Professional Experience

Full Stack Developer - Intern

AYCreation IT Services

Oct 2025 - April 2026

Pune, India

- Developed the initial MVP user interface for AYCreation's School ERP platform, Analyzed product requirements and reshaped into functional application
- Contributed to authentication, authorization, and backend planning.
- Implemented a hybrid RBAC/PBAC permission system supporting granular access control.
- Developed 5 custom projects, including CMS platforms, portfolio websites, and landing pages based on client requirements and which fulfills AYCreation's business objectives.

Projects

Deep Researcher v2

LangChain • React • FastAPI • Sqlite3

- Designed a Harness architecture to coordinate research tasks, storage, and workflow execution.
- Leveraged MCP integrations to connect agents with external tools, agents and data sources.
- Achived all the objectives related to version 2 and fixed the bugs from version 1. ([report here](#))
- GitHub: [Repository](#)

pixelImage: Image optimization & Tools

Tauri • React • Sqlite3

- Image optimization utility and more image tool.
- Desktop app for privacy first and local processing images.
- Built a maintainable and extensible platform designed for future feature expansion and performance improvements.
- GitHub: [Repository](#)

System Stress Tester with Ollama

React • NodeJs • Ollama

- This is an AI benchmarking application for testing and monitoring local LLMs through the Ollama ecosystem.
- The platform for local LLMs, enabling multiple concurrent AI agents to evaluate throughput, latency, and system scalability in real apps.
- Built-in model discovery and monitoring tools for inspecting model specifications, memory utilization, and runtime performance metrics.
- GitHub: [Repository](#)

DB Visualizer: Sqlite visualization platform

React • Tauri • Sqlite3

- It's a desktop database analysis platform for exploring and visualizing SQLite datasets through an intuitive, high-performance interface.
- Developed automated data profiling for pattern detection, format analysis, and statistical insights.
- Built background processing (async) workflows to keep the UI responsive during heavy analysis tasks.
- Built-in data exploration tools including global search, pagination, and table level metadata tracking and database analytics.
- GitHub: [Repository](#)

Deep Researcher v1

React • FastAPI • Ollama

- It's an AI research assistant capable of autonomously collecting, analyzing, and synthesizing information from multiple online sources.
- Engineered an synthetic orchestration layer for managing AI research workflow and final report generation pipelines.
- Implemented limited semantic search and retrieval using vector databases to improve contextual understanding and response quality.
- Deep Researcher v1 served as the foundation for future iterations, validating the core research workflow and informing architectural improvements planned for Deep Researcher V2. ([report here](#))
- GitHub: [Repository](#)

Education

High School (10 + 2) :- PCM + Computer Sc.

2020 - 2022

Kendriya Vidyalaya Ramgarh Cantt

Bachelor of Computer Applications (BCA)

2023 - 2026

Birla Institute of Technology, Mesra

Links



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