

Prawin Kumar

AI SYSTEMS ENGINEER

prawin@vyapai.tech

prawin.app · vyapai.tech

linkedin.com/in/prawinin

github.com/prawinin · hf.co/prawinin

SUMMARY

AI Systems Engineer specializing in end-to-end machine learning systems, retrieval-augmented generation (RAG), LLM applications, computational chemistry, and production deployment. Experienced across data pipelines, model training and inference, API design, containerization, and secure system architecture. Builds and publishes open-source AI products spanning legal research, construction intelligence, scientific computing, and developer education.

EDUCATION

BSc in Data Science & Artificial Intelligence — IIT Guwahati

2023–2026

RESEARCH EXPERIENCE

Research Intern — IIT Guwahati [LinkedIn Post](#)

May 2026 – July 2026

Worked under Dr. Rajiv K. Kar at the Jyoti & Bhupat Mehta School of Health Sciences & Technology on CASCADE, a browser-native computational chemistry platform for molecular sketching, 3D conformer generation, GNN-based property prediction, ADMET profiling, and protein-ligand interaction analysis.

SELECTED WORKS

Writ — Offline Legal RAG Research Assistant

[Project Page](#)

Privacy-first legal research assistant with local LLM inference and hybrid retrieval

- Built an offline Indian legal research assistant combining a fine-tuned legal language model with an encrypted on-device knowledge base and hybrid retrieval; queries never leave the machine.

Python RAG LLMs Hybrid Retrieval Local Inference

CASCADE — Computational Chemistry Workspace

[Live Demo](#) [Project Page](#)

Molecular research workspace with cheminformatics, ML inference, and WebGL visualization

- Created a 2D chemical sketcher, WebGL 3D conformer viewer, GNN/MLP atomic property prediction, ADME profiling, drug repurposing, and AI-assisted PyMOL workflows.

Python Flask RDKit PyTorch GNN Celery Redis Docker

Project Neev — Construction AI Platform

[Live Demo](#) [Project Page](#)

Computer vision, generative floor planning, cost estimation, and 3D visualization

- Designed an AI pipeline for residential feasibility: plot scanning, genetic-algorithm floor plan optimization, ML cost prediction calibrated to CPWD DSR 2025, and interactive visualization for 28 Indian cities.

Python FastAPI OpenCV scikit-learn Three.js Docker

Craft with AI — AI-Native Engineering Course

[Project Page](#)

42-lesson browser-first course for modern software engineering and AI systems

- Developed progressive modules covering Python, Linux, Git, FastAPI, Docker, LLM APIs, vector databases, autonomous agents, LLMops, and CI/CD for AI-assisted development.

Python JavaScript HTML/CSS FastAPI Docker LLM APIs

Vidhi — Indian Legal AI Research Assistant

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Legal AI for statutory interpretation and Indian case-law reasoning

- Built a research assistant trained on Indian Supreme Court judgments, High Court orders, and Central Acts for legal document processing, information retrieval, and case-law analysis.

Python NLP LLM Fine-tuning Information Retrieval

TECHNICAL SKILLS

Languages: Python, JavaScript, SQL, HTML, CSS **AI/ML:** PyTorch, scikit-learn, LLMs, RAG, NLP, GNNs, fine-tuning, embeddings, vector search **Backend:** Flask, FastAPI, REST APIs, Celery, Redis, SQLite **Scientific:** RDKit, ADMET, molecular modeling, 3Dmol.js

DevOps: Docker, Linux, Git, CI/CD, Nginx, API security

INDEPENDENT WORK

VyapAI [vyapai.tech](#)

Independent AI Practice

Client-facing AI engineering across private infrastructure, custom RAG architectures, LLM fine-tuning, and multi-agent systems for legal, financial, construction, and research domains.