

PRATHAM NAHATA

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PROFESSIONAL SUMMARY

Computer Science undergraduate experienced in building full-stack and machine learning systems, including real-time ML inference pipelines, graph neural networks, and multi-agent AI applications. Skilled in Python, FastAPI, React/Next.js, and PyTorch, with a track record of shipping production-ready projects and competing in national hackathons.

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, JavaScript, SQL, HTML/CSS
Frameworks & Libraries: FastAPI, Next.js, React, Express.js, PyTorch, Hugging Face Transformers, scikit-learn, ONNX Runtime, Tailwind CSS, Drizzle ORM, Pydantic
Deep Learning & AI: Transformer Architecture, Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Graph Neural Networks (GIN), Protein Language Models (ESM-2), LoRA/QLoRA Fine-Tuning, SHAP Explainability, Multi-Agent Orchestration, Model Context Protocol (MCP)
Tools & Platforms: Git, Docker, n8n, Vercel, Supabase, GitHub Actions, Postman, WebSockets

PROJECTS

- MindPulse Pro — Behavioral Stress Detection Platform**
FastAPI, Next.js, XGBoost, ONNX Runtime, Tauri, Supabase, WebSockets

[GitHub](#) | [Live Demo](#)

 - Engineered a real-time behavioral stress detection platform that captures keystroke and mouse dynamics via pynput, extracting 50+ temporal features and serving predictions through a FastAPI WebSocket backend secured with JWT and Google OAuth authentication.
 - Exported an XGBoost model to ONNX and ran inference directly in the browser using onnxruntime-web, reducing prediction latency to under 20ms with no server round-trip; integrated SHAP for model explainability.
 - Shipped a cross-platform product comprising a Next.js web app and a Tauri (Rust) desktop client; integrated WebLLM to enable fully offline, browser-local LLM coaching with no API key exposure.
- Unified-DTA — Drug-Target Affinity Prediction System**
PyTorch, ESM-2, Graph Neural Networks (GIN), FastAPI, RDKit, Docker

[GitHub](#)

 - Developed a drug-target affinity (DTA) prediction system fusing Meta's ESM-2 protein language model with Graph Isomorphism Networks (GIN) for joint molecular and protein representation learning; trained and evaluated on industry-standard benchmarks (BindingDB, DAVIS, KIBA) using concordance index (CI) and MSE metrics.
 - Containerized the inference pipeline with Docker and FastAPI with LRU caching, and extended the system with a drug generation module using the DoubleSG molecular architecture for novel compound generation.
- Sentinel — Enterprise Wellbeing Analytics Platform**
FastAPI, React, Graph Analytics, Multi-Agent AI

[Collaborative Project](#) | [GitHub](#)

 - Co-built a privacy-first enterprise wellbeing analytics platform using FastAPI and behavioral ML models to detect employee burnout risk from anonymized interaction patterns, including a graph-based network analysis module for team collaboration insights.
 - Implemented a 3-agent AI orchestration system with agents specializing in burnout scoring, talent discovery, and team health reporting, enabling natural language queries over workforce analytics.

EDUCATION

- Bharati Vidyapeeth's College of Engineering, Delhi**
Bachelor of Technology in Computer Science and Engineering

Sep 2023 – Jun 2027
- Indian Institute of Technology Madras**
BSc Foundation Programme in Data Science (Online)

2025 – 2026

CERTIFICATIONS

- Postman API Fundamentals Student Expert — Postman (2024)
- CS50: Introduction to Computer Science — Harvard University via edX (2024)
- CS50W: Web Programming with Python and JavaScript — Harvard University via edX (2024)
- Machine Learning Specialization — DeepLearning.AI / Stanford University via Coursera

LEADERSHIP & ACHIEVEMENTS

- Grand Finalist, Smart India Hackathon 2024 (SIH 2024): Reached the national grand finale among 492,960+ participants nationwide.
- Top 5 Finalist, AlgoQuest (iSOURCE): Ranked top 5 of 300+ teams in a national competitive programming contest.
- Organizer & Lead, Generative AI Workshop: Designed and delivered a hands-on workshop on real-world LLM applications for 50+ participants.
- Open Source Contributor (GSSoC 2024) & Athlete: Contributed to open-source repos via GirlScript Summer of Code; placed 2nd in Volleyball and Basketball at Ranbhoomi.