

Hemant Pathak

Adm. No. 23JE0402 📞 +91-9548741368

✉ Hemantpathak1411@gmail.com [🌐 linkedin/hemant-pathak1411](https://www.linkedin.com/in/hemant-pathak1411) [🐙 github/HEMANT2027](https://github.com/HEMANT2027)



Education

Indian Institute of Technology (ISM), Dhanbad

Integrated Master of Technology in Mathematics and Computing

Expected May 2028

GPA: 8.80 / 10.00

St. Mary's Convent School, Gajraula

Class XII / X (CBSE)

2023 – 2021

Percentage: 95.6% / 98.8%

Relevant Coursework

- Statistical Inference
- Linear Algebra
- Stanford CS231n (Vision)
- GPU Computing
- Operating Systems
- Object-Oriented Programming
- Data Structures & Algorithms
- Graph Algorithms
- Database Management Systems

Experience

Apparent Energy Solutions Pvt. Ltd.

Lead Software Engineer Intern

Jan 2026 – Present

Remote

- Spearheading the mapping of India's electrical grid infrastructure by integrating computer vision techniques on Google Street View and satellite imagery.
- Trained a custom **YOLOv11** model to detect electrical poles from satellite feeds and implemented hybrid **segmentation and detection** pipelines to identify overhead wires.
- Conducted spatial analysis to model pole-to-pole connectivity, establishing a comprehensive digital twin of the grid topology.

Aeroqube Inc.

Software Engineering Intern

August 2025 – December 2025

Remote

- Developed an AI-assisted medical workflow to reduce diagnostic turnaround time with human-in-the-loop validation.
- Applied MED-SAM 2 for lesion segmentation on CT/X-ray images, achieving over 90% extraction accuracy for downstream diagnosis.
- Integrated OCR pipelines using Nanonets and **Google Cloud APIs** to standardize prescriptions and reports.
- Orchestrated multimodal reasoning pipelines using **LangChain** and **LangGraph** with **Med Gemma 27B** to generate diagnostic and treatment summaries.
- Deployed inference workflows on AWS SageMaker to enable low-latency, scalable production serving.
- Implemented an i-MedRAG-inspired retrieval pipeline to generate context-aware follow-up questions, improving clinical completeness.

Technod8.ai

Generative AI Intern

July 2025

Remote

- Contributed to the NCIIPC Startup India AI Grand Challenge by developing a computer vision pipeline for document understanding.
- Trained and fine-tuned a **YOLOv10** model to detect multilingual document layout components and extract bounding box coordinates for downstream OCR and parsing tasks.

Technical Skills

Languages: Python, C++, C, MySQL

Libraries & Frameworks: PyTorch, Open CV, Scikit-Learn, NumPy, Pandas, LangGraph, LangChain

Developer Tools: Docker, Git, GitHub, AWS Sagemaker

Core Concepts: Machine Learning, Deep Learning, Retrieval Augmented Generation (RAG)

Achievements

- Secured a top 1% finish (rank 80) among 8,000+ participants in the **Shell.ai** Blend Fuel Price Prediction Challenge 2025.
- Achieved Runner-up in **Algoverse**, an algorithmic trading hackathon, by designing a profitable strategy based on statistical arbitrage that outperformed 50+ other teams.
- Earned Runner-up recognition at a high-stakes **Pitch-a-thon**, where 20+ teams competed, by articulating a clear business plan.

Sports Programming

Platform	User Profile	Rating	Problems Solved
Codeforces	HemantPathak	1274 (Pupil)	600+
LeetCode	Hemant1411	1545	60+
CodeChef	devil_59	1694 (3 Star)	60+

Positions of Responsibility

- **Student Placement Coordinator**, Career Development Centre, IIT (ISM) Dhanbad
- **Member**, Fintech Club, IIT (ISM) Dhanbad