

Swapnil Bhadra

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About Me

Currently a student at the Vellore Institute of Technology, I am very excited about the various prospects of AI computing and the ground-breaking technologies that come with it. I enjoy coding, and I am always eager and open to learning new skills.

Education

Vellore Institute of Technology, Vellore, B.Tech in Computer Science and Engineering (Internet of Things) Aug 2023 – ongoing

- CGPA: 9.70/10.0
- **Coursework:** Data Structure and Algorithms, Web Programming, Computer Architecture and Organization, Database Management Systems, Operating Systems

Delhi Public School, Ruby Park, Higher Secondary (Computer Science) Aug 2021 – March 2023

- AISSCE Score: 95%
- **Coursework:** MySQL, Python

Garden High School, Kolkata, Matriculation (Computer Science) Aug 2008 – March 2021

- ICSE Score: 96.8%
- **Coursework:** Java, QBasic, C

Experience

Project Intern, Indian Institute of Technology, Kharagpur May 2025 – June 2025

- Used diffusion models to predict crystal structures
- The diffusion models were text-guided and provided results better than the previous existing models
- Redesigned the diffusion models that were previously using node vectors for message passing and implemented the same using a supernode
- **Certificate of completion:** completion_certificate.pdf

Projects

Designed a portfolio github.com/swapnilbhadra2004/portfolio

- Built a personal site using CSS, HTML and JavaScript and deployed via GitHub Pages.
- Tools Used: CSS, HTML, JavaScript

Online Medical Shop github.com/swapnilbhadra2004/pharmacy

- Developed an online medical shop with globally shared and used medicines with an AI Chatbot and a fully-functional shopping cart, allowing users to shop effectively
- Tools Used: CSS, HTML, Javascript, Alpine.js, Tailwind.css

Hand Gesture Controlled Car 2024

- Built a hand gesture controlled car using Arduino
- Tools Used: Arduino

Technical Skills

Languages: C++, C, Java, Python, CSS, HTML, JavaScript, SQL, Shell programming

Technologies: React.js, Pytorch, Database Management, Linux, Git, Artificial Intelligence

Research

Researcher, Periodic Materials Generation using Text-Guided Joint Diffusion Model May 2025 – ongoing
by implementing a Supernode

Ongoing research on the topic of Periodic Materials Generation using Text-Guided Joint Diffusion Model by implementing a Supernode, in collaboration with Indian Institute of Technology, Kharagpur. Designed Graph Neural Networks in Python using pytorch.

Certifications and Merit Awards

Awarded the Merit Scholarship 2024-25 2025

- Stood 2nd in my branch with a CGPA of 9.72

Awarded the Merit Scholarship 2023-24 2024

- Stood 4th in my branch with a CGPA of 9.73

LeetCode 50 days coding badge 2024,2025

LeetCode 100 days coding badge 2024

Python Pandas certification from LeetCode 2024

HackerRank Java Certification 2024