VIMANSH MAHAJAN

New Delhi, India | vimansh22572@iiitd.ac.in | +91 9756515463
LinkedIn | Portfolio | Github

EDUCATION

Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi) **CGPA**: 9.28 / 10.00 2022 - Ongoing
- *Bachelor of Technology (B.Tech.) in Computer Science Engineering (CSE)*
- ***Achievements:*** *IIITD* ***Dean's List*** *– Academics (2024–25);* ***National Semi-Finalist,*** *Flipkart GRiD 7.0 (2024);* ***Top 5% Finalist,*** *Adobe GenSolve Hackathon (2024); Organiser, TEDxIIITD; Member, Placement Cell; Batch Representative, Student Senate*

The Vivekanand School, Narela, New Delhi **CBSE XII**: 97.2% 2022
- ***Achievements****:* JEE Mains 2022 – **99%ile** (AIR 9,200); JEE Advanced 2022 – **Qualified** (AIR 10,109)

Delhi Public School, Noida **CBSE X**: 96.8% 2020

PROFESSIONAL EXPERIENCE

Bank of New York (BNY) | *Software Engineer Intern* *May 2025- July 2025*
- Built and deployed a **content automation platform** using **Spring Boot, Python-integrated LLM pipeline**, and **Oracle DB,** with **Angular** frontend transforming unstructured finance notes (text/images) into publish-ready articles.
- Implemented **domain-aware segmentation** and contextual visual placement; containerized and deployed services on **Google App Engine**.

Complex Systems (CoSy) Lab | *UG Researcher* *Jan 2025- May 2025*
- Developed RecipeGPT using **Recipe1M** dataset, achieving BERTScore **> 0.85** and ROUGE score of **0.32**.
- Applied a **custom NER model** to extract structured ingredient entities, enhancing input consistency and model understanding.
- Developed a **3-stage GPT-2 fine-tuning pipeline**: pretrained on **100k+** recipe instructions, conditioned on raw ingredients and titles, then fine-tuned with NER-enhanced inputs using special tokens and label masking.

TavLab | *UG Researcher* *Aug 2024- Dec 2024*
- Predicted IC50 values for HDAC6 inhibitors using **ADMET** and **BlueDesc** datasets with molecular descriptor–based modelling.
- Built and optimized ML models with advanced preprocessing, feature selection, and statistical analysis to accelerate compound screening and drug candidate identification.

SKILLS

Tools & Technologies: Python, Hugging Face Transformers, Java, Spring Boot, C++, PostgreSQL, OracleDB, MySQL, REST APIs, Git

Technical Skills: Machine Learning **(ML)**, Artificial Intelligence **(AI)**, Natural Language Processing **(NLP)**, Data Science, Data Structures & Algorithms, Object-Oriented Programming, Database Management System **(DBMS)**, System Design, Computer Networks

Certification: Ethical Hacking, The Complete Python Bootcamp (Udemy)

Soft Skills: Teamwork, Effective Communication, Adaptability & Rapid Learning, Problem Solving, Execution Under Pressure

PROJECTS

Healthcare Answer Summarisation | *Python, PyTorch, Hugging Face Transformers, LoRA* *Apr 2025*
- Built a **BART-large-CNN + LoRA** pipeline to generate perspective-specific summaries (Information, Suggestion, Experience, Question, Cause) from medical Q&A data.
- Designed a dual-head classifier and improved generalisation by selectively fine-tuning on hard examples with an initial BERTScore < 0.84.
- Outperformed a **FlanT5 baseline** by **+3.24 BLEU** and **+0.0355 BERTScore** (final: BLEU 5.61, BERTScore 0.8782).

OptiWealth: Quantitative Portfolio Optimization Platform | *Spring Boot, Python, yfinance, React, PostgreSQL* *Nov 2025*
- **Designed and implemented a distributed portfolio analytics system** with Spring Boot backend orchestrating Python microservices, computing multi-portfolio metrics: returns, volatility, Sharpe ratio, VaR/CVaR, beta, max drawdown, and diversification.
- **Implemented time-series forecasting and risk modelling** using ARIMA (price trends), GARCH (volatility), and Monte Carlo simulations, enabling forward-looking scenario analysis.
- **Developed portfolio optimization pipelines** (efficient frontier simulation, max-Sharpe, min-volatility) with scheduled market analysis and AI-generated investment summaries.

OncoHelp-AI: Medical Decision Support for Brain MRI | *Python, Streamlit, Grad-CAM, LLMs* *Dec 2025*
- Built an AI-assisted brain MRI triage system using ResNet18 and EfficientNet models with **Grad-CAM explainability** and uncertainty estimation via **Monte Carlo Dropout**.
- Developed a safe, **context-aware** medical summarization and Q&A layer using **Gemini/BioGPT** LLM, enforcing validated inputs and scoped responses for **responsible AI usage**.

EXTRACURRICULARS

- **Coding Platforms:** Leetcode, Codeforces *(Pupil- Max Rating:* ***1275****)*
- **Hobbies**: Debate, Fitness, Badminton
- **Volunteering Experience:** Volunteer at Seva Sankalp NGO