AARAV MAHESHWARI 🔗

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Highly motivated AI/ML and data analytics enthusiast with experience in developing algorithmic trading models, RLHF systems, full-stack ML/AI applications, and end-to-end data pipelines. Skilled in designing scalable solutions, optimizing model performance, and delivering actionable business insights.

EDUCATION

Bachelor of Science, Geology	2024-2028	Indian Institute of Technology, Kharagpur	*8.9 CGPA
CBSE (Class XII)	2024	Jayshree Periwal High School	92%
CBSE (Class X)	2022	Jayshree Periwal High School	92%

EXPERIENCES & INTERNSHIPS

DATA ANALYST INTERN | BONANZA PORTFOLIO LTD. | On Site **Dec'24 - Jan'25**

- Developed and optimized **5+ algorithmic trading models** in Python, boosting backtested returns by ~12%.
- Processed and analyzed **millions of equity and commodity data points** to improve signal accuracy. Built **interactive performance dashboards** for stakeholders, enhancing reporting and decision-making

RLHF EXPERT – OUTLIER AI | Freelance **Mar'25 – Jul'25**

- Supported **training and fine-tuning of large-scale RLHF models**, improved learning efficiency and model performance.
- Curated and preprocessed **high-quality datasets** for model alignment, enhancing accuracy and robustness across tasks.

ADDITIONAL COURSES & SKILLS

Languages & Tools: Python, C++, SQL, Git, Docker, AWS,Pinecone, GraphSQL,Tableau | **Codeforces Rating: 1200+ (Div 2/3 contests)**

ML/AI Frameworks: PyTorch, TensorFlow, HuggingFace, Scikit-learn, LangChain, LangGraph

Data Tools: Pandas, NumPy, Seaborn, Matplotlib, Apache Kafka, Apache Airflow

Deployment Tools: Flask, Google Colab, Jupyter, Modal, Pickle

Google Product Management: *Coursera* | Skills Learned: Fundamentals of Project Management, Strategic Thinking

ACADEMIC PROJECTS

MONTE CARLO & BLACK-SCHOLES OPTION PRICING SIMULATOR | Python, GBM, BS, MCS | GitHub

- Built a vectorized Python simulator to model European call and put option pricing using Monte Carlo simulations and the Black-Scholes analytical formula, ensuring high computational efficiency across **100,000+ simulations.**
- Visualized terminal stock price distributions using Geometric Brownian Motion (GBM), enabling comparison between empirical and theoretical models for improved financial decision-making.
    - *Developed a Python-based NSE stock trading simulator with secure login, real-time price tracking, and portfolio analytics using NumPy and JSON/CSV data persistence.* **GitHub**

AI/ML PROJECTS: CHATBOT & CHURN PREDICTION | Link

- Developed **full-stack ML/AI applications**, including a **Transformer-based chatbot** and a **customer churn prediction model** with ~87% accuracy using Random Forest & XGBoost.
- Deployed scalable systems on **Modal/Flask**, handling **200+ RPS** and **10,000+ customer records** with <200 ms response time, delivering actionable insights using **SHAP visualizations** and collaborating on system design and deployment cycles.

END-TO-END DATABASE ARCHITECTURE & VISUALIZATION | Clint Work

- Designed and implemented a **scalable relational database** with ETL pipelines, ensuring data integrity, normalization, and high-performance querying. Integrated the database with **Tableau dashboards** to deliver real-time business insights and KPI monitoring.

RESEARCH PAPER

HYBRID TRANSFORMER–LSTM MODEL FOR CRYPTOCURRENCY FORECASTING | Independent Research | Link

- Developed a **hybrid Transformer–LSTM model** with reinforcement-based adaptive learning, trained on a **3-year BTC/USDT dataset (2020–2023)** to enhance forecasting stability and volatility response.
- Developed full data/model pipelines and published the work as a **research paper on ResearchGate**.

EXTRACURRICULARS & CONTRIBUTIONS

- Contributed 3+ merged PRs to TensorFlow Core, fixing cross-device precision bug in segment_max/min ops and improving GPU consistency & test coverage by ~15%.
- Top 20% participant in 10+ Kaggle competitions | Contributor to open-source ML repositories (HuggingFace, LangChain)

POSITION OF RESPONSIBILITIES

Data Analytics Inter-Hall Team | Lal Bahadur Hall of Residence **2024 - 2025**

- Analyze and interpret datasets for inter-hall competitions, contributing to data - driven insights and strategies.

Open-Soft Inter-Hall Team | Lal Bahadur Hall of Residence **2024 - 2025**

- Participated in a open-source software initiatives, contributing to project development, coding, and collaborative problem-solving.