

Hemaksh Chaturvedi

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EDUCATION

Masters in Computer Science, New York University

2025 | New York City, USA

Relevant Courses: Machine Learning, Foundation of Data Science, Database Management, Big Data, Algorithms.

CGPA: 3.67

Bachelor of Technology in Computer Science and Engineering, Vellore Institute of Technology

2019 – 2023 | Vellore, India

Relevant Courses: Data Structure and Algorithms, Software Engineering, Data Visualization, Natural Language Processing

CGPA: 8.56

PROFESSIONAL EXPERIENCE

Quantitative Developer, Sov AI 🌐

Jun 2024 – Aug 2024

- Developed and maintained a Python library for pairs trading, incorporating cointegration-based, distance-based, and machine learning-driven selection algorithms. **Enhanced strategy performance by 2%** and **reduced computation time by 4%** through code optimization and algorithm refinement.
- Designed and integrated trading signal generation methods including statistical models, machine learning algorithms, and stochastic control models. **Achieved a 3% improvement in signal accuracy** and **reduced processing time by 8%**, resulting in quicker decision-making and more responsive trading strategies.

Graduate Assistant, NYU Tandon Career Hub 🌐

Feb 2024 – Present

- Assisting with guidance counseling** and career coaching, utilizing effective communication skills to enhance students' self-presentation abilities.
- Led an event as the primary speaker** in front of a student audience, demonstrating effective self-marketing strategies for interviews.
- Conducted interviews** to identify suitable candidates for Data Science and LeetCode Bootcamp Instructor positions.

Machine Learning Fellow, Fellowship.AI 🌐

Oct 2022 – Jan 2023

- Collected data for illumination scenarios using various techniques including Trimap, ModNet, Pymatting, PaddleSeg, and Semantic guided models, achieving nearly **65% accuracy** in desired results.
- Implemented image harmonization techniques to address inconsistencies between foreground and background elements such as color, illumination, occlusions, boundaries, and shadows, resulting in nearly **85% accuracy** in achieving desired outcomes

Full-Stack Developer, ISPA EXIM PVT LTD 🌐

Aug 2022 – Oct 2022

- Augmented company requirements and user experience /user interface analysis, resulting in strategic enhancements that notably boosted website traffic and **bolstered the company's online presence by nearly 40%**.
- Collaborated cross-functionally, implementing best practices in design and web development to **optimize user experience**, and employed A/B testing for continuous enhancement.

Backend Developer, Sortizy 🌐

Oct 2021 – Mar 2022

- Translated technical requirements into tailored solutions, delivering targeted and timely notifications within the application to enhance user experience using PostgreSQL, resulting to nearly **15% improvement in system efficiency**.
- Collaborated cross-functionally to iterate and enhance backend functionalities using Spring and SQL, aligning technical implementations with business objectives for **improved performance and user satisfaction**.

PROJECTS

Active Portfolio Management, NYU Financial And Risk Engineering Research Team 🌐

Feb 2024 – present

- Developing a paper clustering **NLP model** to extract abstracts and essential information from summarized research papers, facilitating streamlined information retrieval and analysis with **96% accuracy**. Performed data modeling for better understanding.
- Integrated extracted findings into the codebase, refining algorithmic strategies and optimizing portfolio allocation for **enhanced performance by 14%**
- Utilized gathered data to evaluate model performance and **fine-tune algorithmic** decision-making processes, ensuring effective portfolio management.

Photo Album Web Application, ElasticSearch, Rekognition, S3, API Gateway, CloudFormation 🌐

Feb 2024 – Apr 2024

- Developed a scalable photo album web app utilizing **ElasticSearch, Amazon Lex, and Rekognition**, enabling natural language search. Achieved a **5% reduction in search time** and **improved search accuracy** by allowing users to query photos by people, objects, actions, and landmarks.
- Implemented a **CI/CD pipeline with CloudFormation** for automated deployment and infrastructure provisioning, which resulted in a **8% faster deployment cycle** and **increased deployment reliability by 11%**.

Portfolio Optimization - Black Litterman, PyPortfolioOpt, Pandas, Matplotlib, Seaborn, Plotly 🌐

Oct 2023 – Dec 2023

- Integrated quantitative market data and qualitative investor views to construct optimal asset allocations, **enhancing portfolio performance by 8%**.
- Augmented risk management strategies by incorporating the BL model, resulting in a **5% reduction in Value at Risk (VaR)**.

Ship Detection in Satellite Images, TensorFlow, CUDA, Computer Vision and UNET Model 🌐

Nov 2022 – May 2023

- Modified a UNET model** to maximize the semantic segmentation of ships in satellite images using CNN layers in the model for better results
- Detected ships and achieved a **dice score of 0.7 with 99.5% accuracy** which helped concerned parties to control sea traffic

SKILLS

(Python, R, C, C++, Java, JavaScript), (HTML, CSS, React, Frontend, Flask, Spring Boot), (SQL, MySQL, NoSQL, PostgreSQL, Oracle), (Tableau, PowerBI, MS Excel, Shiny, ggplot, NumPy, Pandas, Matplotlib, Seaborn, Plotly, Arviz, Pymc), (TensorFlow, Keras, Streamlit), (Quantitative Ability, Statistical Analysis, Applied Mathematics, Statistics, Causal Graphical Models), (Cloud Computing, Version Control, GCP, Github, Amazon Web Services (AWS)), (Data Analysis)

ACHIEVEMENTS

IMC Trading - Prosperity 2, Manual and Algorithmic Trading Competition 🌐

Apr 2024

- Achieved 93rd rank in India, 239th rank in the USA and overall rank of 873rd globally