Hemaksh Chaturvedi

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EDUCATION

Masters in Computer Science, *New York University* 2023 – 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 – present
- 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 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 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, resulting to nearly 15% improvement in system efficiency.
- Collaborated cross-functionally to iterate and enhance backend functionalities, 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
- Assisted in 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.
- 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.

Portfolio Optimization - Black Litterman, *PyPortfolioOpt, Pandas, Matplotlib, Seaborn, Plotly* ⬈ Oct 2023 – Dec 2023
- Implemented the Black-Litterman model for portfolio optimization, integrating market equilibrium principles and investor sentiment analysis.
- 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).

Causal Relation Between GDP per Capita and Life Expectancy, *Arviz, Pymc* ⬈ Oct 2023 – Dec 2023
- Investigated the influence of GDP per capita on life expectancy, accounting for temporal confounders.
- Employed Multivariate Linear Regression to examine the relationship among GDP per capita, year, and life expectancy. and identified significant positive correlations, informing the development of impactful public health policies.

Ship Detection in Satellite Images, *TensorFlow, Pytorch, CUDA, 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), (Tableau, MS Excel, Shiny, ggplot, NumPy, Pandas, Matplotlib, Seaborn, Plotly, Arviz, Pymc), (Computer Vision, TensorFlow, Keras, Streamlit), (Quantitative Ability, Statistical Analysis, Applied Mathematics, Statistics, Causal Graphical Models), (Version Control, Git,Github, Amazon Web Services (AWS))

ACHIEVEMENTS

IMC Trading - Prosperity 2, *Manual and Algorithmic Trading Competition* ⬈ Apr 2024
- Achieved overall rank of 873rd globally, standing 239th in the USA and 93rd in India