AYUSH CHAUDHARY

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SKILLS & INTERESTS

Skills: Python, C++, Java, C, Octave, VHDL, Numpy, Pandas, Matplotlib, HTML, SQL, Tableau, Microsoft Azure, Autodesk, Github, MATLAB, MS Office, LATEX, PyTorch, TensorFlow, Keras, Data Structures, Docker.

Interests: Computer vision, Language learning models, pipeline building, Reinforcement learning, Backend web development, software development, statistical analysis, pattern recognition, Generative AI, Circuit design.

WORK EXPERIENCE

Mastercard **Gurgaon, India**

Machine Learning Engineer *Jun 2022 - Jul 2022*

- Launched a robust pipeline for generating data reports, utilizing aggregate functions on **100,000** tabular data points
- Introduced Copynet and state-of-the-art Natural Language Processing models such as **GPT2** to train the extracted features, resulting in improved accuracy and efficiency in identifying potential money laundering activities by **30%**
- Model deployment automated manual tasks performed by analysts, saving approximately 1.8k man hours annually.

Zeus Knowledge Centre **New Delhi, India**

Quantitative Researcher *Jun 2021 - Nov 2021*

- Implemented Random Forest, SVM, and RNNs to develop systematic **trading strategies** for an investment fund
- Conducted extensive fine-tuning of decision tree algorithms, including LGBM, XGBoost, and Cataboost, using Python to evaluate the performance of trading strategies on historical market data of **1 million** data points.
- Analyzed a corpus of 230 stocks and compared the actual top 30 stocks with the predicted stocks. Optimized the common top stock selection by **50%**, demonstrating increased accuracy of the time series financial market models.

EDUCATION

University of Maryland **College Park, MD**

Masters of Science in Applied Machine Learning (CGPA: 4.0/4.0) *Graduation Date: May 2025*

Indian Institute of Technology **New Delhi**

B.Tech in Electrical Engineering with Minor in Computer Science (CGPA: 9.1/10) *Graduation Date: Jun 2023*

PROJECT EXPERIENCE

Prof. Gourab Ghatak **IIT Delhi**

Handling Distribution change in Multiarm Bandits *Aug 2022 - Nov 2022*

- Created an innovative algorithm using Dynamic Multiarm Bandits to optimize portfolio performance by **20%**
- Innovated a novel approach to make the exploratory MAB algorithm **resilient to changes** in the distribution.
- Conducted extensive research and analysis to derive an **upper bound on the probability of eliminating an arm** with a modified mean probability distribution, ensuring the algorithm's effectiveness in various scenarios.

Prof. Lalan Kumar **IIT Delhi**

SEMG-based Gesture Recognition using 3D CNN *May 2021 - May 2021*

- Developed and devised a gesture recognition CNN model using isometric and isotonic finger gestures from 18 subjects, resulting in an increase in recognition accuracy from **97.1% to 98.6%**, surpassing industry standards.
- Revitalized a 3D-CNN architecture to convolve spatiotemporally, effectively capturing spatial and temporal dependencies of the finger gestures, leading to improved accuracy and robustness of the gesture recognition system.
- Analyzed and compared the performance of a 2D convolution approach with a newly discovered **3D convolution** approach for gesture recognition, resulting in a significant increase in accuracy by **1.5%**

Prof. Rahul Garg **IIT Delhi**

Dynamic Memory Allocator *Feb 2023 - Apr 2023*

- DLL and BST were used to perform dynamic memory allocation, **AVL Tree** was used to allocate memory efficiently
- All the contiguous memory blocks were merged using **Defragmentation to allocate memory** more efficiently