Harikesh Kushwaha

Location: New Delhi, Delhi

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TECHNICAL SKILLS

Languages	:	Python, SQL, MATLAB, C++
Frameworks	:	TensorFlow, Keras, PyTorch, Scikit-learn, Django, Streamlit
Libraries	:	matplotlib, pandas, NumPy, statsmodels, Seaborn, BeautifulSoup, Selenium
Databases	:	MySQL, MSSQL, MongoDB
Dev Tools	:	VS Code, Git, GitHub, Jupyter Notebook, Anaconda, AWS, Azure

EXPERIENCE

Junior Data Scientist   June 2023 – Present
Nuvoretail Enlytical Technology Private Limited   *New Delhi*

- **Automated Amazon Bidding with Python:** Developed Python scripts to automate Amazon Marketing Services bidding, resulting in a **50% reduction** in manual intervention and a **20% increase** in performance.
- **Improved Log Tracking and Issue Identification with Airflow Scheduling:** Leveraged Airflow for **log management** and **task issue identification**, resulting in **70% reduction** in time for issue identification.
- **Enhanced Bidding Accuracy with Machine Learning:** Created **machine learning** models and **statistical algorithms** to predict the optimal bid for a product yielding a **30% drop** in cost per click.
- **Development of a Flask Microservice:** Designed and implemented a Flask server to facilitate **team interaction** with the output of the algorithms, causing the decision-making time to **decrease by 50%**.

EDUCATION

Indian Institute of Technology Delhi   New Delhi, India
Master of Science in Physics, (8.6 GPA)   *July 2021 – May 2023*

Banaras Hindu University   Varanasi, Uttar Pradesh India
Bachelor of Science in Physics, (8.4 GPA)   *July 2018 – May 2021*

PROJECTS

pystock   *Python, portfolio theory, pytest*   Source Code

- Developed **pystock**, a comprehensive **Python library** for **portfolio optimization** and management. Utilizing **object-oriented programming**, created a **user-friendly API** capable of optimizing portfolios with any number of securities.
- The library includes various models, such as the **Capital Asset Pricing Model, Single Index Model**, **Fama-French three-** and **five-factor models**, and has a suite of over **100 unit tests** written with **pytest and fixtures**, spanning more than **1500 lines of code**.

optionalyzer   *Python, options, futures, plotly, BS model*   Source Code

- Developed **optionalyzer**, a powerful **Python library** for **Options Strategy Builder** that makes it easy to create custom options trading strategies.
- Implemented the **Black-Scholes Model** to accurately calculate **Option prices** and utilized **optimization** techniques to find the **implied volatility** of the Option, enabling users to make better trading decisions.
- Leveraged **Plotly** to create an **interactive Options payoff diagram** for any date, allowing users to explore potential outcomes for different combinations of Options.

frontier   *Python, portfolio theory, pytest*   Source Code

- Developed **frontier**, a Python module for **plotting the efficient frontier** of a portfolio with an arbitrary number of securities.
- Utilizes **Monte Carlo simulations** to create an **interactive efficient frontier**, enabling users to easily explore different portfolios and their expected returns and risks.

House Prices Prediction   *Python, pandas, scikit-learn, Matplotlib, Seaborn*   Source Code

- Analyzed over **80** features to predict house prices using machine learning. Performed **data cleaning**, **exploratory data analysis**, and **feature engineering** making data ready for modeling.

- Trained **multiple models** using scikit-learn and selected the best one by applying **grid search** and **cross-validation**. Achieved a **top 12%** ranking on the Kaggle leaderboard.

Digit Recognizer   *Python, TensorFlow, Keras, Kaggle, HuggingFace*   [Source Code]

- Developed a very deep **convolutional neural network** using TensorFlow and Keras with **dropout** and **batch normalization** to improve performance.
- Achieved an accuracy of **99.48%** on the test set, securing a place in the **top 15%** on the Kaggle leaderboard.
- Deployed the app on **HuggingFace** using **Gradio** and made it available to the public. Find the app [here].

CERTIFICATIONS

- Machine Learning Specialization (DeepLearning.AI) [Certificate]
- Deep Learning Specialization (DeepLearning.AI) [Certificate]
- Simulation Models for Decision Making (University of Minnesota) [Certificate]
- IBM Data Analyst Capstone Project (IBM) [Certificate]
- Financial Markets (Yale University) [Certificate]