Harikesh Kushwaha

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Full Stack Developer

I am a highly skilled web developer with over **3 years of experience** in **HTML, CSS, JavaScript, and PHP**. I have knowledge of popular frameworks such as **React, Angular, and Vue.js** and experience with REST APIs and MVC frameworks.

Technical Skills

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

Education

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

Banaras Hindu University — Varanasi, Uttar Pradesh India
Bachelor of Science in Physics, (8.4 GPA) — *July 2018 – May 20231*

Projects

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

- Analyzed over **80** features to predict house prices using machine learning.
- Performed **data visualization** and **feature engineering** using Matplotlib and Seaborn, respectively.
- 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.

IBM Data Analytics Capstone Project *Python, pandas, Matplotlib, Web Scraping, Web API* Source Code

- Gathered and analyzed data from various sources, including **API** and **web scraping**. Conducted **exploratory data analysis** and **wrangling** to prepare the data for further analysis.
- Built a **dynamic dashboard** to extract valuable insights from the collected data, and effectively **communicated** the findings to others through an **engaging presentation**.

Credit Risk Assesment *Python, pandas, scikit-learn, kaggle* Source Code

- Developed a credit textbfrisk assessment model by analyzing various customer features, performing data cleaning, feature engineering, and exploratory data analysis.
- Established a basic model for initial experimentation, and trained advanced models such as **LR**, **SVM**, **XGBoost**, **Catboost**. Top performing model, achieved a test AUC-ROC score of **0.97** and precision of **0.96**.

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.
- Developed a **user-friendly API** that enables users to easily add **short or long**, **Put and Call Options** to the payoff diagram for strategy building.

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.
- Built on top of **pystock**, the module supports all the models that are supported by pystock, including **CAPM, SIM, FF3FM** and **FF5FM**, making it a comprehensive tool for portfolio optimization and management.

Tableau Dashboards *Tableau, Web Scraping, Web API, BeautifulSoup* Music Books

- Created an interactive **Tableau viz** showcasing my **Spotify streaming history** over several years, using **data blending** and **calculated fields** to present key insights.
- Utilized **web scraping** techniques to extract my book reading history from **Goodreads** and created an interactive **Tableau** dashboard to analyze and visualize the data.

Certifications

- Deep Learning Specialization (DeepLearning.AI) Certificate
- Machine Learning Specialization (DeepLearning.AI) Certificate
- TensorFlow Developer Certificate in 2022: Zero to Mastery (Udemy) Certificate
- Financial Markets (Yale University) Certificate
- Simulation Models for Decision Making (University of Minnesota) Certificate
- IBM Data Analyst Capstone Project (IBM) Certificate