M V D Satya Swaroop

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Applying for Quantitative Analyst, Quantitative Developer, Quantitative Researcher, Model Validation Analyst, Quantitative Trader.

Education

Stony Brook University — Stony Brook, New York
Masters of Science in Applied Mathematics — Aug 2021 – May 2023
Course Work: Probability Theory, Linear Algebra, Stochastic Models, Statistics, Derivative pricing, Portfolio Theory, Risk Management.

University of Texas at Austin — Hyderabad, India
Post Graduate Program in Machine Learning — Aug 2020 – May 2021
Course Work: EDA, Regression, PCA, K Means Clustering, Deep Neural Networks, Convolutional Neural Networks, LSTM.

Jawaharlal Nehru Institute of Engineering and Technology — Hyderabad, India
Bachelor of Technology in Computer Science — Aug 2015 – May 2019
Course Work: Algorithms and Data Structures, DBMS, Web development, big data analytics, System design, Cloud computing.

Experience

AISafe — Hyderabad, India
Machine Learning Engineer — Feb 2020 – Aug 2021

- Lead as a team of software developers, designed a web application beta using flask web application framework leveraging Siamese neural network to allow only unique users to maintain an AISafe Account.
- Utilized firebase database to design a key value-based storing of user credentials and implemented binary search algorithm to spot duplicate user ids. Developed front end by Html, bootstrap, and backend in python flask API's.
- Implemented authentication using another social network platform API and Twilio.
- Mobilized web application using Heroku platform, achieved 96% accuracy in classifying users using their Face Id and Image.
- Deployed a scene summarization Auto Encoder Decoder Model with custom diversity loss function, minimized diversity loss to train neural network model and achieved an accuracy of 85% for summarizing 5-minute frames into 20 seconds clips.

Deloitte — Hyderabad, India
Analyst — Jan 2019 – Feb 2020

- Implemented a financial forecasting solution for a fortune 500 client, leveraging Oracle EPBCS, Azure data bricks for data staging and predictive forecast generation using Machine learning algorithms. Deployed and back tested models to predict sales and expenses.
- Extracted and transformed historical sales data, inventory data from Oracle ERP system for analysis, designed and constructed data pipelines using Azure data bricks to ingest, cleanse and process large volumes of data.
- Devised statistical models and algorithms to forecast demand based on historical data and identify trend, seasonality, and impact of promotions etc. Validated and fine-tuned forecasting models using cross validation and evaluation metrics, created dashboards using Power BI to communicate forecasting results and insights to stakeholders for taking business decisions.
- Coded Python API scripts leveraging Oracle SaaS APIs to automate workflow of a security consultant such as assigning data security roles, design functionality of roles in both development and production instances.

Programming/Technical Skills

- Skills: C++, Python, R, Java, SQL, HTML, Excel, Web development, Machine learning, Option Pricing Models, Data structures and algorithms, Problem solving, Data visualization, Data preprocessing, REST API development, Microsoft Word, Communication skills, Leadership, Team Player.
- Frameworks: Flask, NodeJS, Bootstrap, Git, Keras, Scikit-learn, Pandas, Numpy, Power BI, Spark, LibCurl, Boost, Seaborn.
- Platforms: AWS EC2, S3, Firebase, Azure Databricks, Azure Devops, Oracle ERP, Git, Microsoft office.
- Certifications: Deep learning specialization, Algorithms and data structures specialization, Azure Databricks and Spark specialization.

Academic Projects

C++ application to Analyze Earnings impact on Stock Price Movement

- Co-developed a C++ application to extract earnings and price data for Russell 1000 stocks and impact on stock price. Implemented a preprocessing module to retrieve and clean stock price from yahoo finance using LibCurl.
- Classified stocks into 3 groups based on surprise percentage of EPS. Performed random sampling from each group of 30 stocks and computed excess return with SPY as benchmark.
- Calculated AAR for each group and deviation to compare impact of EPS on stock price.

Portfolio Optimization and Stock price forecasting using LSTM.

- Assessed stock returns to identify optimal allocation of capital for a stock portfolio and trained a model using historical data of S&P 500 for selected technology stocks. Used Pandas and Seaborn for EDA in Python.
- Generated a Random assignment of weights to portfolio of stocks, allocated ideal weight by leveraging efficient frontier considers stocks with highest Sharpe ratio.
- Utilized the past data of portfolio with static optimal weight to predict future portfolio returns applying linear regression and LSTM with 82% and 89% accuracy respectively.

Option Pricing System

- Applied Boost, STL library and object-oriented principles to create an option pricing system. Applied Black Scholes pricing method for European options, developed functions to compute Greeks.
- Employed a numerical method pricing with Monte-Carlo and finite difference methods for pricing European Options.