**7th Sem – Project E-ShodhYatra**

**Team Details:**

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**Branch: Computer Engineering**

**Division: EC3[PC1]**

**University (GTU/MU): GTU**

**Project 1:**

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| **Project Title:** | Stock Price Forecasting |
| **Website Reference:** | https://stocksnrural.net/ |
| **Features of Project:** | ->More than 80% of our top recommendations led to the successful trades.  - >Predictions are performed daily by the state-of-art neural networks models.  - >Buy/Sell signals based on the predictions and current prices.  - >Find best stocks with maximum PnL, minimum volatility or highest forecasting accuracy. |
| **Advantages:** | - >Application of artificial neural networks to the prediction of stock prices and their trends is covered in multiple academic papers.  - >Uses daily data on US stock market. We consider daily prices as a combination of useful signal. |
| **Limitations:** | ->However, prediction of stock prices using deep networks requires a lot of computing power and has numerous complications and thus was not feasible until latest developments in parallel computing and big data areas.  ->They can not take into account fundamental factors and news sentiment. |

**Project 2:**

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| **Project Title:** | Time-Series Forecasting: Predicting Stock Prices Using Facebook’s Prophet Model |
| **Website Reference:** | https://towardsdatascience.com/time-series-forecasting-predicting-stock-prices-using-facebooks-prophet-model-9ee1657132b5 |
| **Features of Project:** | ->**Time-series forecasting** models are the models that are capable to **predict** **future values** based on **previously** **observed** **values.**  **->**The most commonly used models for forecasting predictions are the [**autoregressive**](https://en.wikipedia.org/wiki/Autoregressive_model) models. |
| **Advantages:** | ->A time series is a sequence of observations taken sequentially in time.  ->Prophet is able to capture **daily**, **weekly** and **yearly seasonality** along with **holiday** **effects**, by implementing[**additive regression**](https://en.wikipedia.org/wiki/Additive_model)**models.** |
| **Limitations:** | ->It is only available for facebook prophet model.  ->**we cannot meassure the error of the model** |

**Project 3:**

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| **Project Title:** | Wallet Investor |
| **Website Reference:** | <https://walletinvestor.com/stock-forecast> |
| **Features of Project:** | ->Forecasting by Machine Learning.  ->Wallet Investor’s **cryptocurrency and other forecasts** are based on changes in the exchange rates, trade volumes, volatilities of the past period, and other important economic aspects. |
| **Advantages:** | ->As manually creating forecasts is extremely time-consuming and requires great expertise, we decided to create an AI-based solution to generate forecasts.  ->Machine learning is a type of ***artificial intelligence*** (AI) that allows software applications to become more accurate in predicting outcomes without being explicitly programmed. |
| **Limitations:** | ->There is no AI based solution to generate forecast.  ->The accuracy of the prediction depends on the **quantity and the quality of the data**, so it is also difficult to anticipate anything in the case of newer cryptocurrencies. |

**Project 4:**

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| **Project Title:** | Screener |
| **Website Reference:** | https://www.screener.in/ |
| **Features of Project:** | ->You can choose your own columns in results for a quick snapshot of companies.  -> Volume charts provide historical delivery percentages.  -> Get insights about qualitative changes in companies through smart tracking of Credit Ratings.  ->Upload your own excel sheets with all the formulas and formatting. Screener automagically remembers and exports data in that format. |
| **Advantages:** | ->You can get an overview of any listed company in minutes.  -> You can run queries on 10 to 15 years of financial data.  -> You can track announcements and other regulatory filings at one place.  ->I regularly use this website to check the financials of a company and will also recommend using this website. It saves a lot of time for the readers to navigate through the financials. |
| **Limitations:** | ->This website is only for the investor not for the users. |

**Project 5:**

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| **Project Title:** | Stock Prices Prediction |
| **Website Reference:** | https://www.analyticsvidhya.com/blog/2018/10/predicting-stock-price-machine-learning-techniques-python/ |
| **Features of Project:** | -> The profit or loss calculation is usually determined by the closing price of stock for the day.  -> We will be using a dataset from Quandl and for this particular project, we have used the data for ‘Tata Global Beverages’. |
| **Advantages:** | -> Machine learning techniques have the potential to unearth patterns and insights we did not see before, and these can be used to make unerringly accurate predictions.  -> “Average” is easily one of the most common things we use in our day-to-day lives. |
| **Limitations:** | -> Market is closed on weekends and public holidays.  -> They cannot explore target variables and different techniques to predict the daily closing price of the stock. |

**Project 6:**

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| **Project Title:** | Stock Price Prediction Using TensorFlow |
| **Website Reference:** | <https://medium.com/>mlreview/a-simple-deep-learning-model-for-stock-price-prediction-using-tensorflow-30505541d877 |
| **Features of Project:** | ->Its flexibility and performance allow researchers to develop all kinds of sophisticated neural network architectures as well as other ML algorithms.  ->For regression problems, the mean squared error (MSE) function is commonly used. MSE computes the average squared deviation between predictions and targets. |
| **Advantages:** | ->Also our [data science consultants](https://www.statworx.com/de/data-science/) at STATWORX are heavily using TensorFlow for deep learning and neural net research and development.  ->One can see that the networks rapidly adapts to the basic shape of the time series and continues to learn finer patterns of the data. |
| **Limitations:** | ->Different types of deep learning models, such as recurrent neural networks might achieve better performance on this task.  ->One thing that is missing, at least in my opinion, is a neat graphical user interface for designing and developing neural net architectures with TensorFlow backend. |

**Project 7:**

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| **Project Title:** | Stock Price Pattern Prediction Based on Complex Network and Machine Learning |
| **Website Reference:** | https://www.hindawai.com/journals/complexity/2019/4132485/ |
| **Features of Project:** | -> KNN is a simple and effective classification method that is easy to calculate and its performance is comparable to the most advanced classification methods.  ->SVM,which can map nonlinear separable data into high-dimensional space and use hyper lens for classification is highly suitable for sample classification. |
| **Advantages:** | -> This study analyzes the stock price fluctuation patterns of the three most important stock indexes for the US stock market.  -> The stock price network characteristics variables not only contain price change information for individual stock, but also reflect the overall change characteristics of the market at the macro level. |
| **Limitations:** | -> The application of the complex network method to the stock market is still in the developmental stage.  -> In addition, the combined use of machine learning and complex network methods to study the stock market deserves more in-depth discussion and diversified development. |

**Project 8:**

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| **Project Title:** | Stock Prediction in Python |
| **Website Reference:** | https://towardsdatascience.com/stock-prediction-in-python-b66555171a2 |
| **Features of Project:** | -> Changepoint represents where a time series goes from increasing to decreasing or from increasing slowly to increasingly rapidly.  ->Now that we have an idea of the effect of the prior,we can numerically evaluate different values using training and validation set. |
| **Advantages:** | -> Tweak the results to make it look like we were successful.  ->Hide the results so no one ever notices.  ->Show all our results and methods so that others can learn how to do things better. |
| **Limitations:** | -> Stocker is a Python tool for stock exploration. Once we have the required libraries installed.  -> We have the package developed by Facebook for additive modeling. |

**Project 9:**

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| **Project Title:** | Stock Price Prediction- Machine Learning Project in Python |
| **Website Reference:** | https://data-flair.training/blogs/stock-price-prediction-machine-learning-project-in-python/ |
| **Features of Project:** | -> To build the stock price prediction model, we will use the NSE TATA GLOBAL dataset. This is a dataset of Tata Beverages from Tata Global Beverages Limited, National Stock Exchange of India.  -> To develop the dashboard for stock analysis we will use another stock dataset with multiple stocks like Apple,Microsoft, Facebook. |
| **Advantages:** | -> The sentiment of the investors also influences the price of shares. This means that if they are ready to take risks and are confident about investing in the market, it will share up the stock prices. Thus, stock prices are affected by the general direction of the market. |
| **Limitations:** | -> This is only for beginners so it cannot be helpful for the real-world application.  -> Due to the low- risk appetite and low confidence among investors, the market stagnates, eventually resulting in the fall of share prices. |

**Project 10:**

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| **Project Title:** | Stock Market Analysis and Prediction |
| **Website Reference:** | https://nevonprojects.com/stock-market-analyzer/ |
| **Features of Project:** | -> Demand and Supply shares of a company is a major reason price change in stocks. When Demand Increases and Supply is less, price rises and vice versa.  ->*Corporate results:* This will be regarding the profits or progress of the company over a span of time say 3 months.  ->Popularity: If any news about a company is about to come and is it bad or good.  We have to analyze the variations in the stock value of the companies with respect to these factors using some data mining algorithms |
| **Advantages:** | ->Stock market includes daily activities like Sensex calculation, exchange of shares.  ->Corporate results: Companies declare their performance results and profit at the end of each quarter. |
| **Limitations:** | ->User Interface: The user is required to select which company is he interested in amongst the various companies that have been provided.  ->Asp.net with SQL: As communication with user is performed in C# and data required for processing is in a Database, a connectivity has to be implemented between the Database and C# application |