Predicting Returns from Stock Portfolio Using Machine Learning Algorithms.

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Significance:
In this project, We first identify the optimal allocation of capital for a portfolio of stock returns based on value versus risk using Sharpe Ratio and after we get the allocation ratio for each stock in the portfolio, we compute the historic returns for that allocation and build a model on that historical data to predict further price movement using traditional time series techniques, machine learning algorithms and Long and Short term Neural Networks.

Outcomes:
We Strive to use various computational techniques to identify the ideal allocation of capital in a portfolio of stocks using efficient frontier. Then we employ machine learning model to predict the value of portfolio. We eventually would want to calibrate the different allocation ratio and the machine learning model to predict the movement of portfolio.
We also intend to compare the performance of these models.

Techniques and Software to be used:
We will be using Computational Techniques and Machine Learning Algorithm. Also libraries such as Python, Pandas, Scikit Learn, Numpy and other libraries.