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**University Of Toronto: FinTech Bootcamp**

**Project Title: Stock Portfolio Optimizer**

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**Project Description/Outline**

The project aims to calculate the optimal portfolio weights for a chosen set of stocks. Data will be pulled from the Yahoo Finance API and after cleaning the data, we will then proceed to calculate each stocks Return, Standard Deviation, Variance and CoVariance metrics. Using this we will iteratively calculate portfolio risk vs return profiles and the corresponding efficient frontier. Accordingly, we will determine maximum portfolio Sharpe Ratio and accompanying optimal portfolio weights.

**Research Question to be Answered**

Once the optimal portfolio has been determined, we will then proceed to back-test the data and calculate descriptive statistics for the portfolio and compare to the market (benchmark: Dow Jones Index). We will also look at performing a Monte Carlo Simulation of the optimal portfolio versus the Dow Jones. Additionally, we compare the actual Optimal Portfolio Returns against the index for the year.

**Datasets to be Used**

Stock Prices using Yahoo Finance API.

**Breakdown of Tasks**

