* User pick portfolio of Assets
* Simulate Portfolios >> Create Data to Use in Training Machine Learning Model
* Predict: Risk Profile / VaR

Plot Sharpe Ratios – Risk Profile AKA Risk Adjusted Return

Predict Portfolio Alpha:

* Does not require prediction of the stock market. Alpha can be earned/generated regardless of how the stockmarket performs as it is the relative performance of a portfolio measured and compared on a risk adjusted basis.
  + A portfolio can generate alpha if the market goes down if the portfolio performs better or loses less on a risk adjusted bases than the benchmark.
  + Train machine learning model using backtested data where we simulate the perofrmance of the portfoio using actual historical data. Measure the perfomance on a risk adjusted basis then compare the optimized portfolio performance and boolean value as to whether or not the portfolio generated alpha.
* Use simple statistical analysis to describe historic stock market performance... Simulate random walk >> Modeling
* Training model would require sample portfolios that actually generate alpha.
  + We want to train the model to understand them composition characteristics of an optimized/alpha generating portfolio not the actual names of the stocks. Therefore would need a way to describe a stock with properties (accurate representation)

Predictive value would need to be relative to a benchmark and should not require the prediction of the index itself

Presentation:

1. Everything High-Level – Make Analogies & Use Parallel Reasoning
   1. Stanford Professor – Tina Selig said it best: It’s not so much about knowing, as it is about know what you don’t know.
2. Why is this important and how can we apply this?
   1. The implications of know whether a custom portfolio construct is likely to outperfrom the SP500 has to do with risk management and cost-efficiency