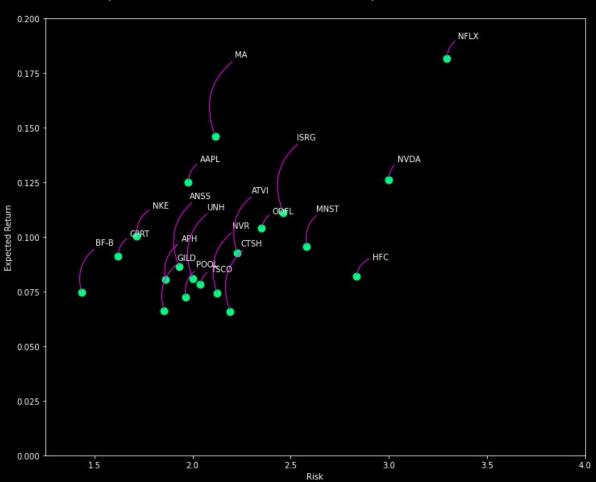
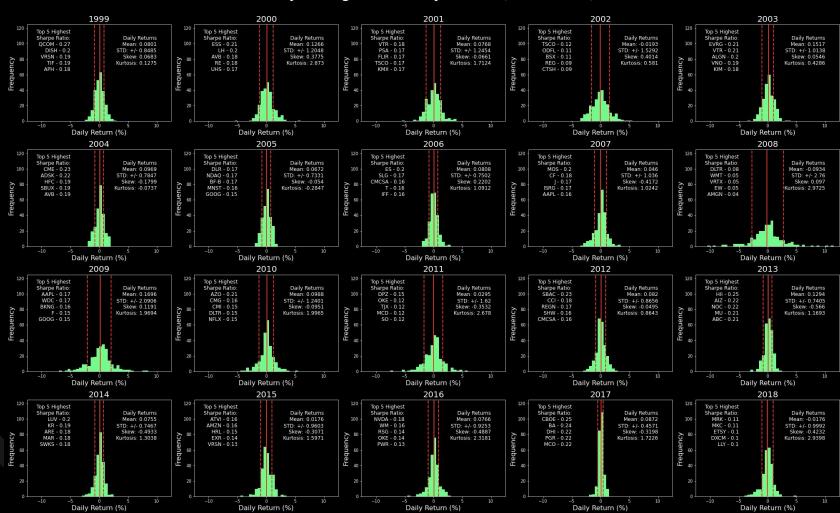
# S&P Portfolio Optimization Project Report

Justin Bates November 20, 2020

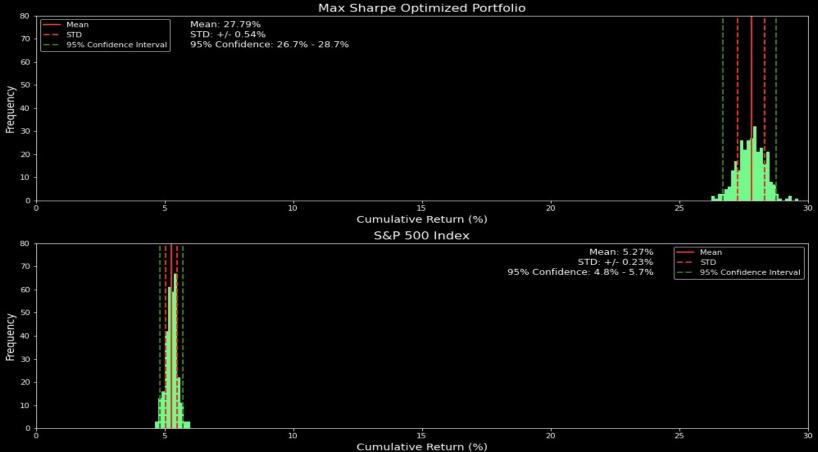
Top 20 Cumulative Return Assests' Expected Return vs. Risk

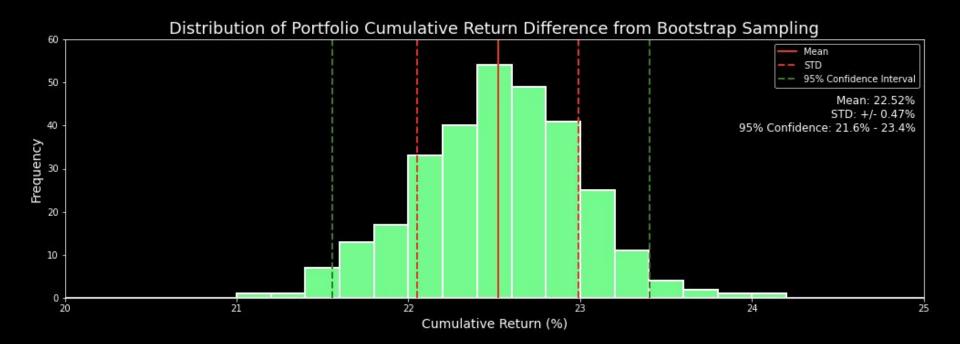


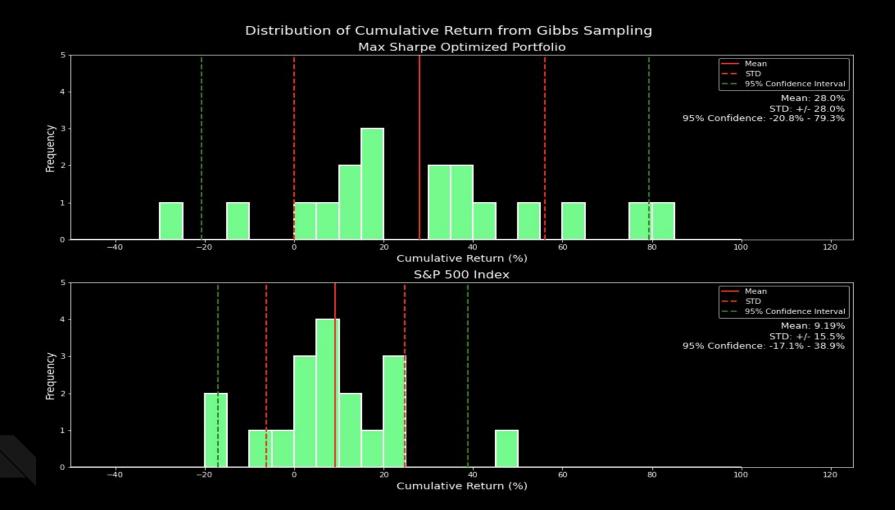
### Yearly Histogram of Daily Return (1999-2019)

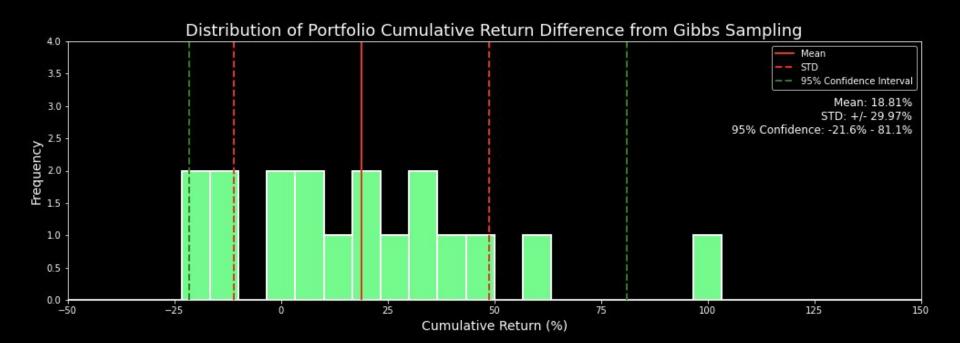


## Distribution of Cumulative Return from Bootstrap Sampling Max Sharpe Optimized Portfolio

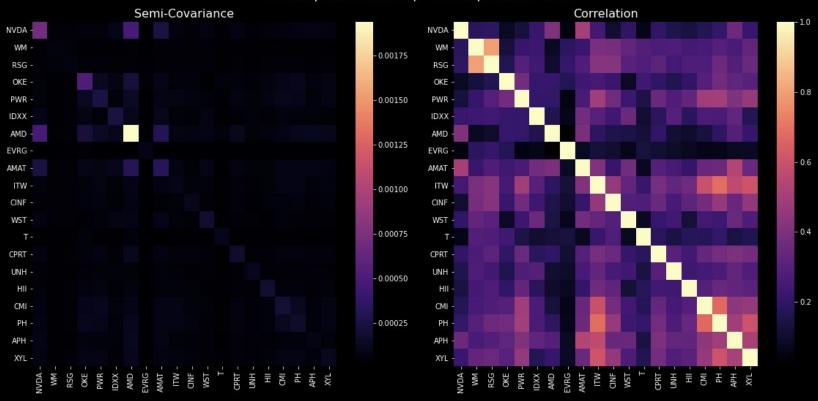


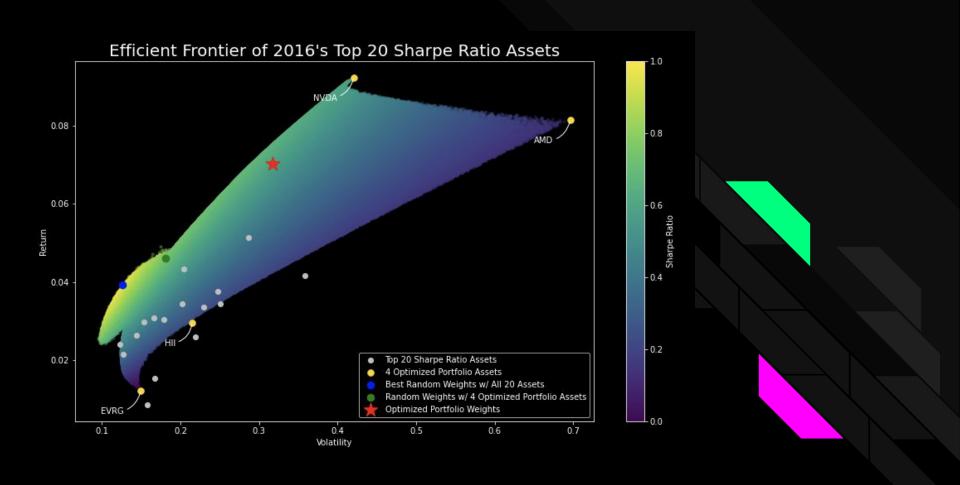


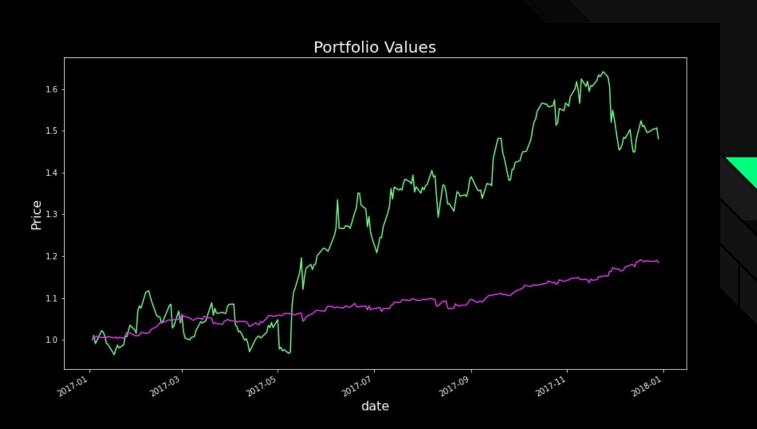




#### Heatmaps of 2016's Top 20 Sharpe Ratio Assets







# Thank You Code Is On Github