Assessing the Validity of Technical Analysis

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Project Goal

Assess the validity of technical analysis by using historical price and volume data to generate technical indicators to be used as features in a supervised ML classifier.

Background

Technical Analysis is the practice of valuing stocks on past volume and price information and relies on 3 assumptions:

- The market discounts everything
- Price moves in trends
- History tends to repeat itself

Data Processing

Technical analysis relies heavily on the use of what are known as technical indicators. We generated these ourselves from the time series data through the use of the pandas and numpy libraries for python.

EDA
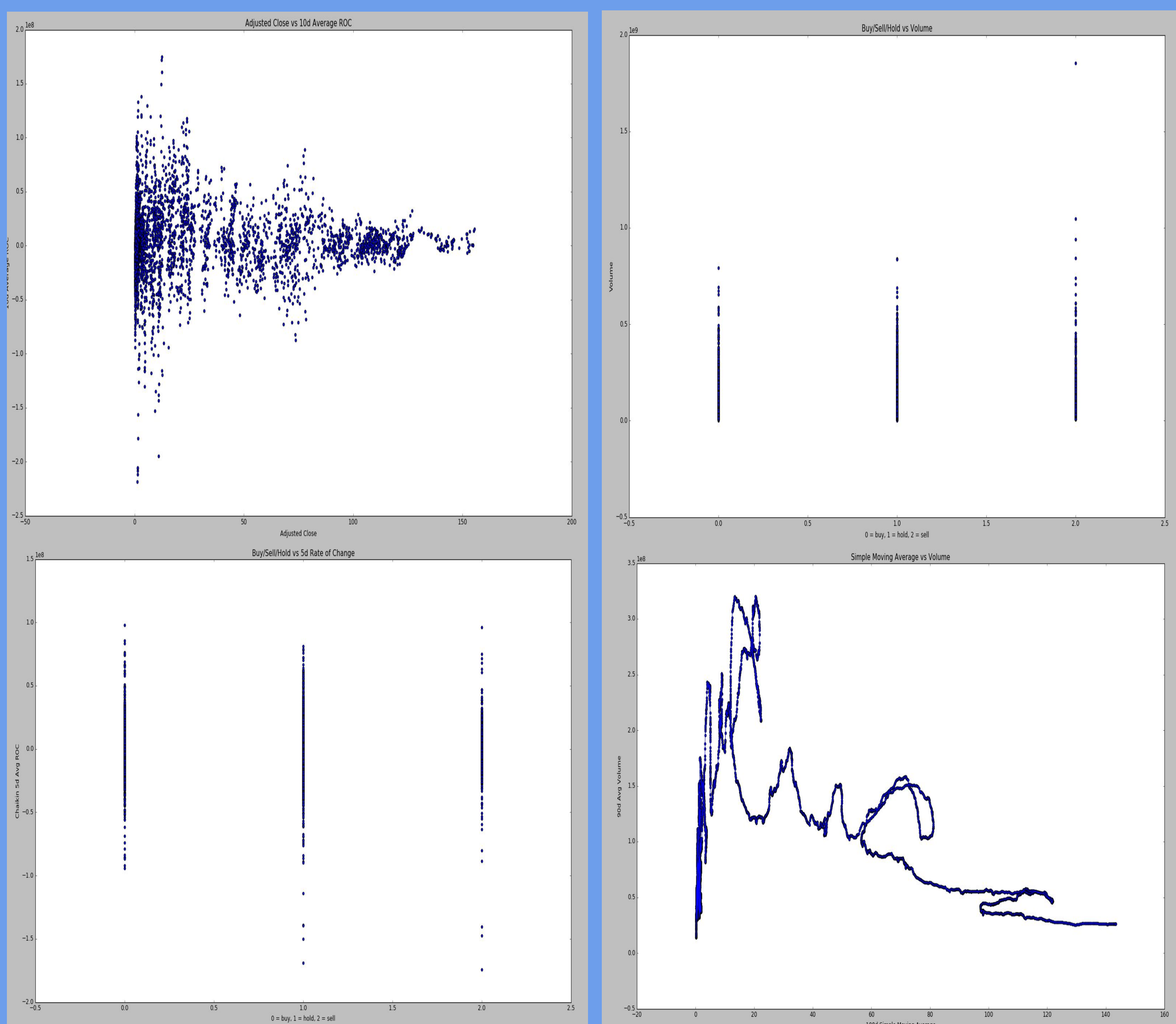
Classifier Performance

We tested several different ML classifiers, and the top 3 performers were the KNN, SVC (polynomial kernel), and the Random Forest Classifier. The classifier with the best performance was the Random Forest Classifier.
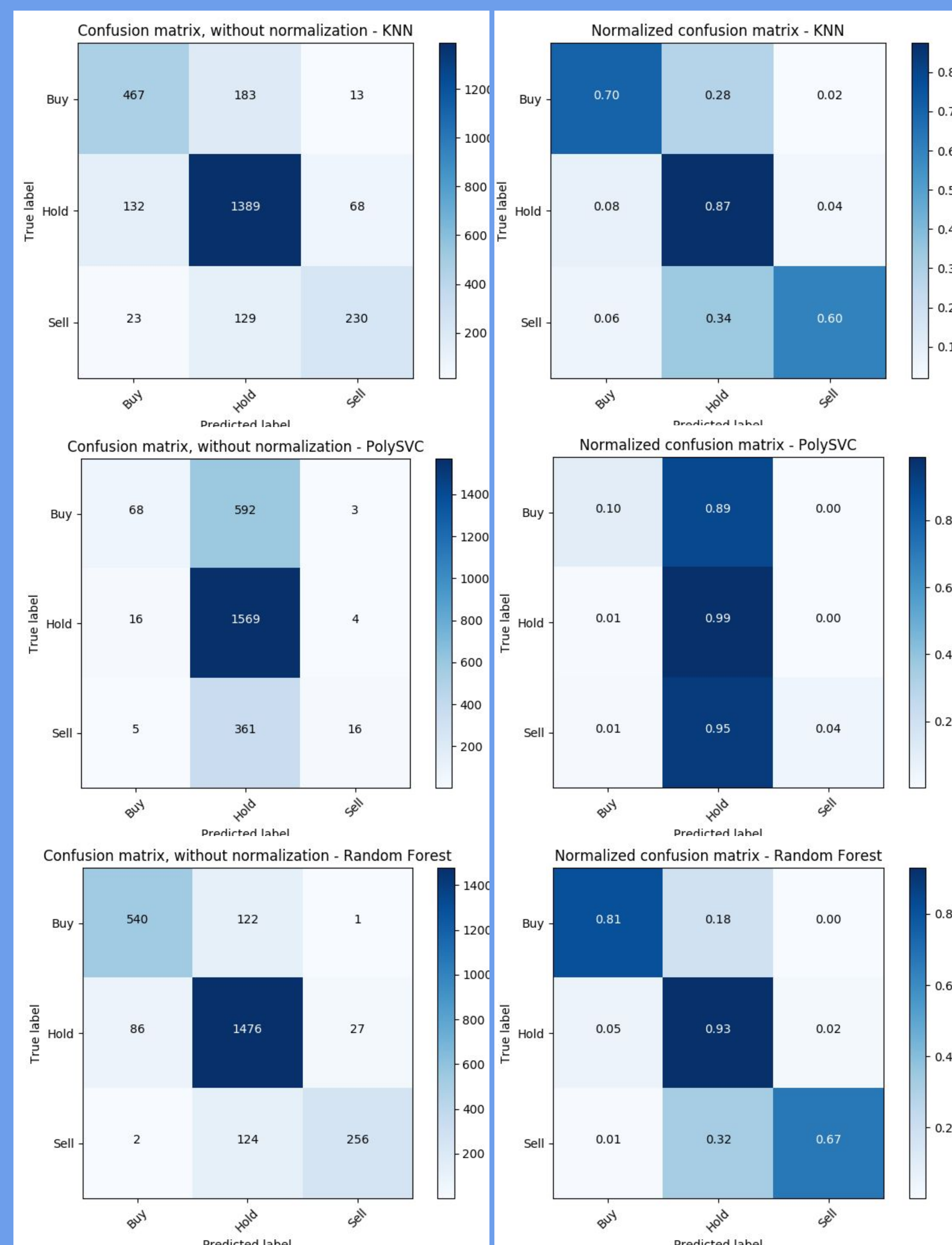
Findings

We found the aggregate performance of the tested classifiers to perform poorly when trained and tested on the entire IT sector, but we saw a vastly improved accuracy, precision, and recall when trained and tested on a particular equity (AAPL).