# Stock Market Prediction

## Abstract

## Introduction

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### Motivation for the project

### Importance and prevalence of the problem

Explain size of the financial industry affected by the problem and why having better tools to predict the stock market may be important to the average person

### Projects aims

Goals of the projects

### Project outline

How the project will meet those goals

## Background

### The Stock Market

Explanation of:

* What the stock market is
* How the stock market works
* The components of the stock market
* Terminology needed to read the report

### Analysis of the problem

* Explanation of the difficulty of the problem
* Separation of profitability and accuracy
* Temporal reach of prediction
* Formal definition of the problem

### Review of existing work

## Methodology and Data

### Tools Used

* Python, Numpy, Pandas
* Quantopian/Zipline vs Pyalgotrade
* Statsmodels

### Data Used

* Data sources
* Format of the data
* Adjusted price

### Simulation of strategies

* Similarity to real life

### Defining a successful model

* Statistical significance of model

## Attacking the Problem – Fundamental Analysis

### PE Ratio

## Attacking the Problem – Technical Analysis

### Hobbyist Approaches

### Review of Metrics

### KNN on metrics

### OLMAR algorithm

### StatsModels

## Attacking the Problem – Machine Learning