



# PREDICTING STOCK PRICE

John Nguyen  
Matthew Chou  
Aditya Batchu  
Kavi Gill  
Jingru Huang  
Taylor Chau  
Tom Gardiner





# GOALS AND OBJECTIVES

## GOAL

Predicting the stock price of SPY on any given date

## OBJECTIVE

Using machine learning models and linear regression,  
make an estimate of the closing stock price of SPY on a given day

---

# SOURCE

Origin: YFinance

Time Period: 1/1/2014 - 12/31/2023

Data Volume: 2500 (days), SPY DATA

**yahoo!**  
**finance**



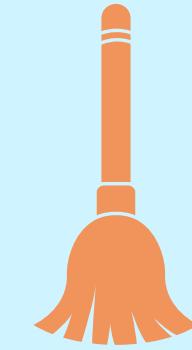
# PROCESS

The steps we took and the tools we used



## Gathering

YFinance  
CSV



## Cleaning

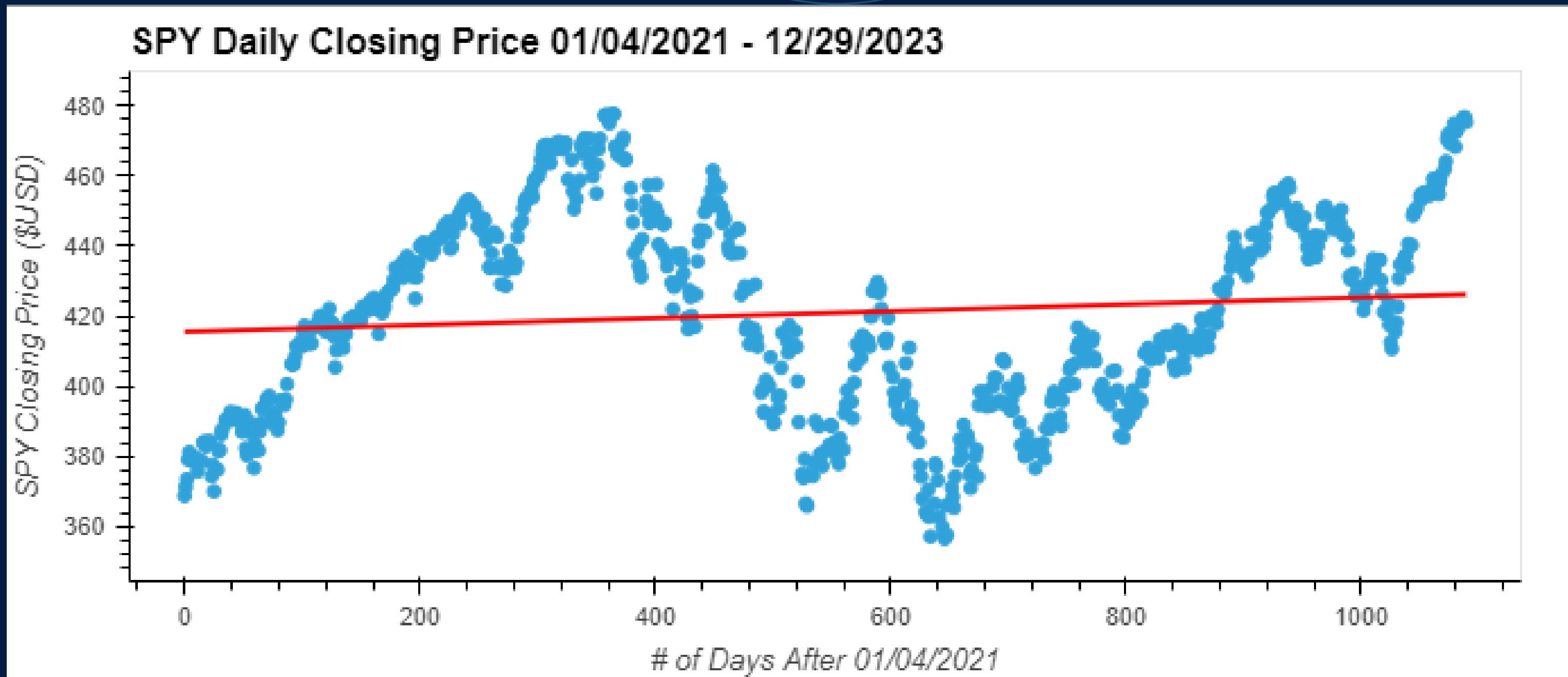
Pandas  
Excel  
PostgreSQL  
SQLAlchemy



## Predicting

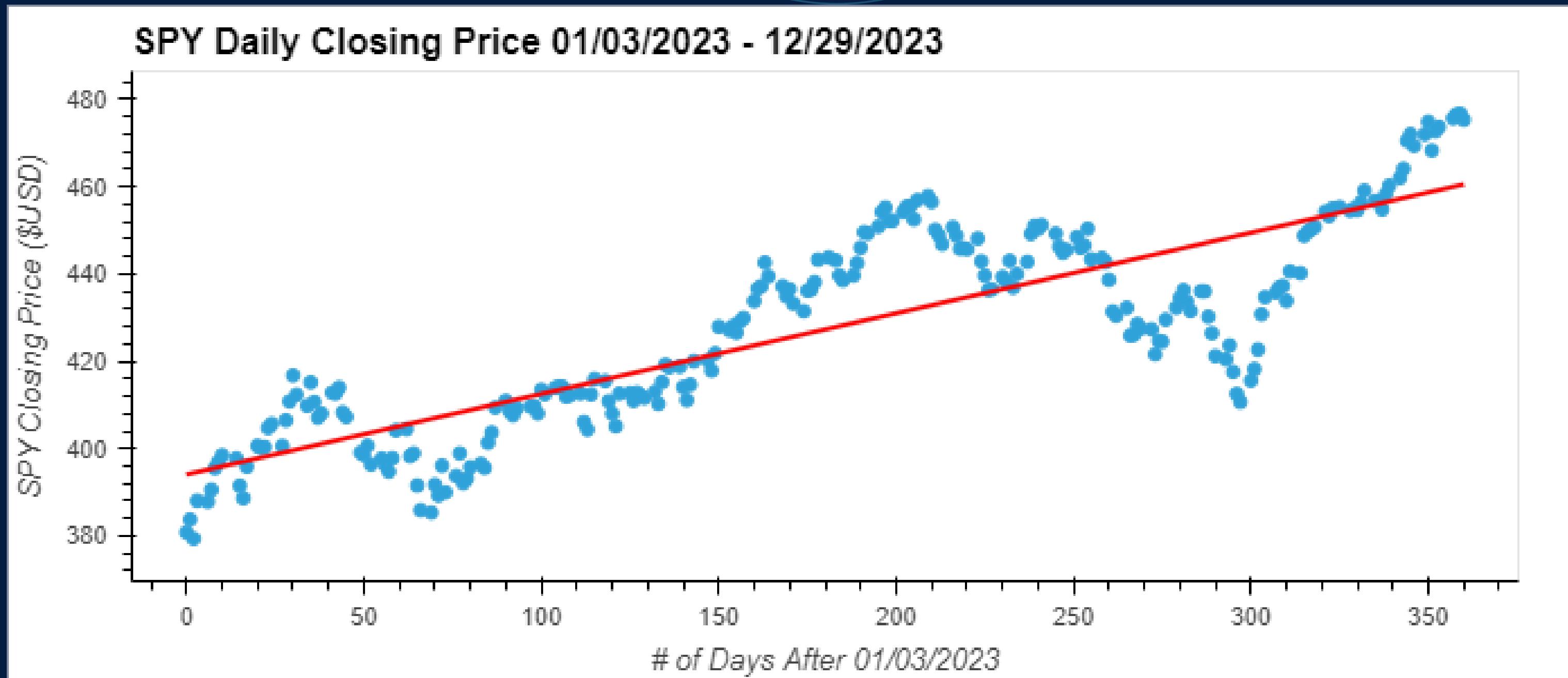
Scikit-Learn  
hvPlot Visualizations

# Visualization



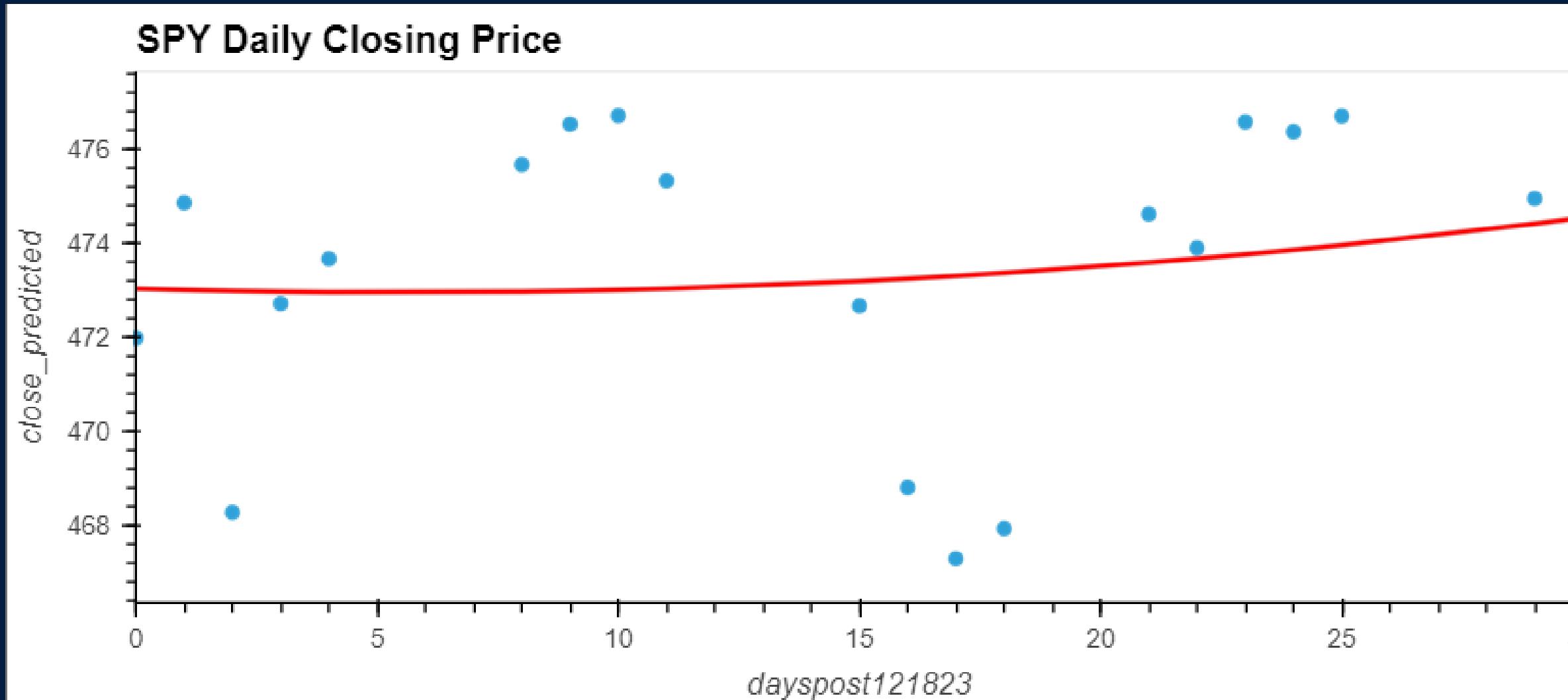
$$y = 0.01X + 413.25$$

# Visualization



$$y = 0.18X + 394.08$$

# Polynomial Regression Model



# Analysis

- Data showed a positive regression over time for closing stock prices.
- Data points not perfectly positive, with several bear markets within analyzed time period. This led to an accuracy of only 67% using linear regression for a 1 year look back.
- In order to further increase accuracy, additional extrinsic factors would need to be considered, such as the pandemic and international instability.



# Thank's For Watching

