

Algo to the Moon & Beyond

Customizable Automated AlgoTrader with Backtesting

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Customizable Features

Trading Strategy

Capable of implementing and backtesting virtually any technical trading strategy. For this project we chose the Golden Cross and Moving Average Crossover strategies.

Equity Holdings

Select any publicly traded equity security on major stock exchanges to be backtested and traded.

Time Frame

Option to choose the time horizon and frequency of price movement analysis to execute trade of selected stock.

Challenges

Challenge 1

Data Availability

Data Feeds can be limited by amount of historical data available and price movement pull frequency

Challenge 2

Strategy Construction

Success of a strategy can vary depending on parameters set, and the selection of the security to be traded.

Challenge 3

Stock Selection

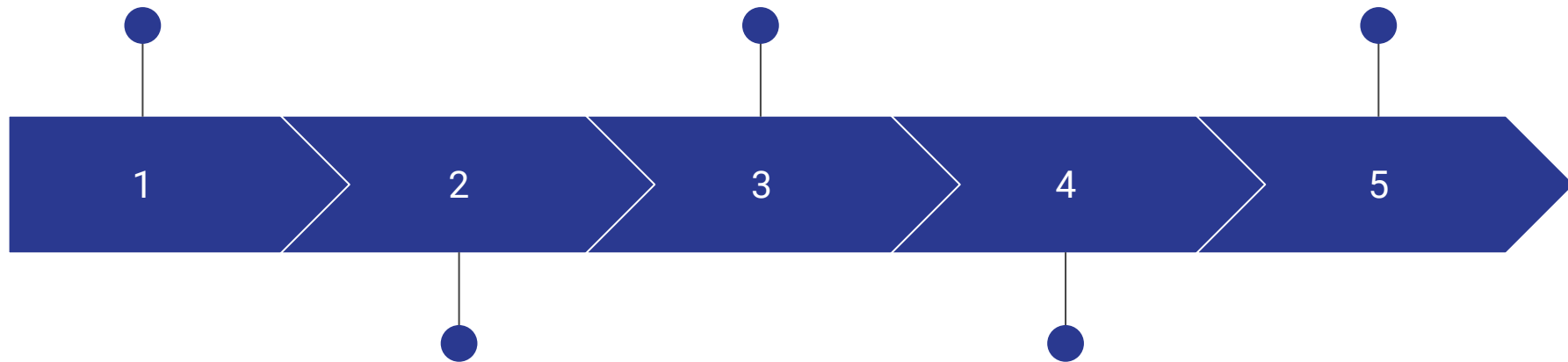
Selecting an appropriate stock to implement can be difficult due historical performance not guaranteeing future results.

Implementation

Select, Customize, or
Create Trading
Strategy

Backtest strategy for
selected security

Execute strategy in
automated trading
algorithm



Choose security for
strategy execution

Analyze efficacy of
the strategy for
security

Tools & Technologies

Alpaca Trading API

Backtrader

JupyterLab

Yahoo Finance API

Alpha Vantage API

Tested Securities

Tesla (TSLA)

Facebook (FB)

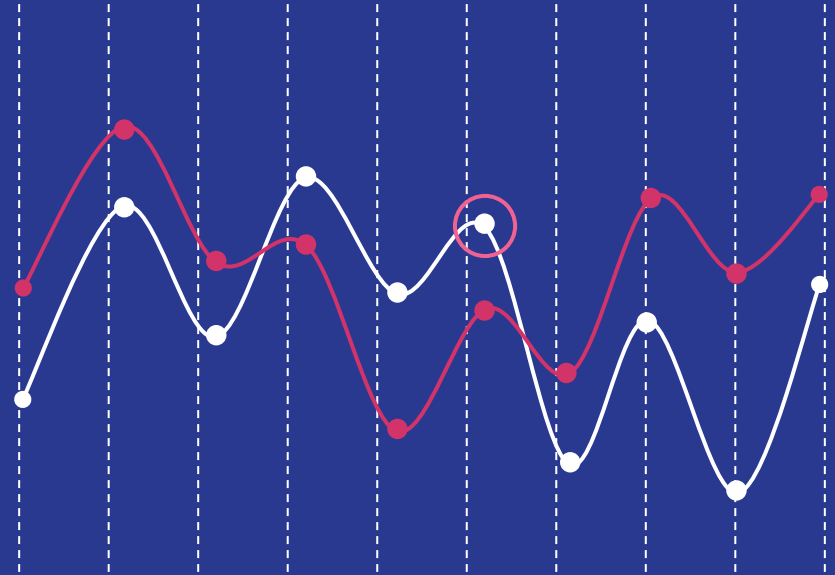
Washington Prime Group Inc (WPG)

Amazon (AMZN)

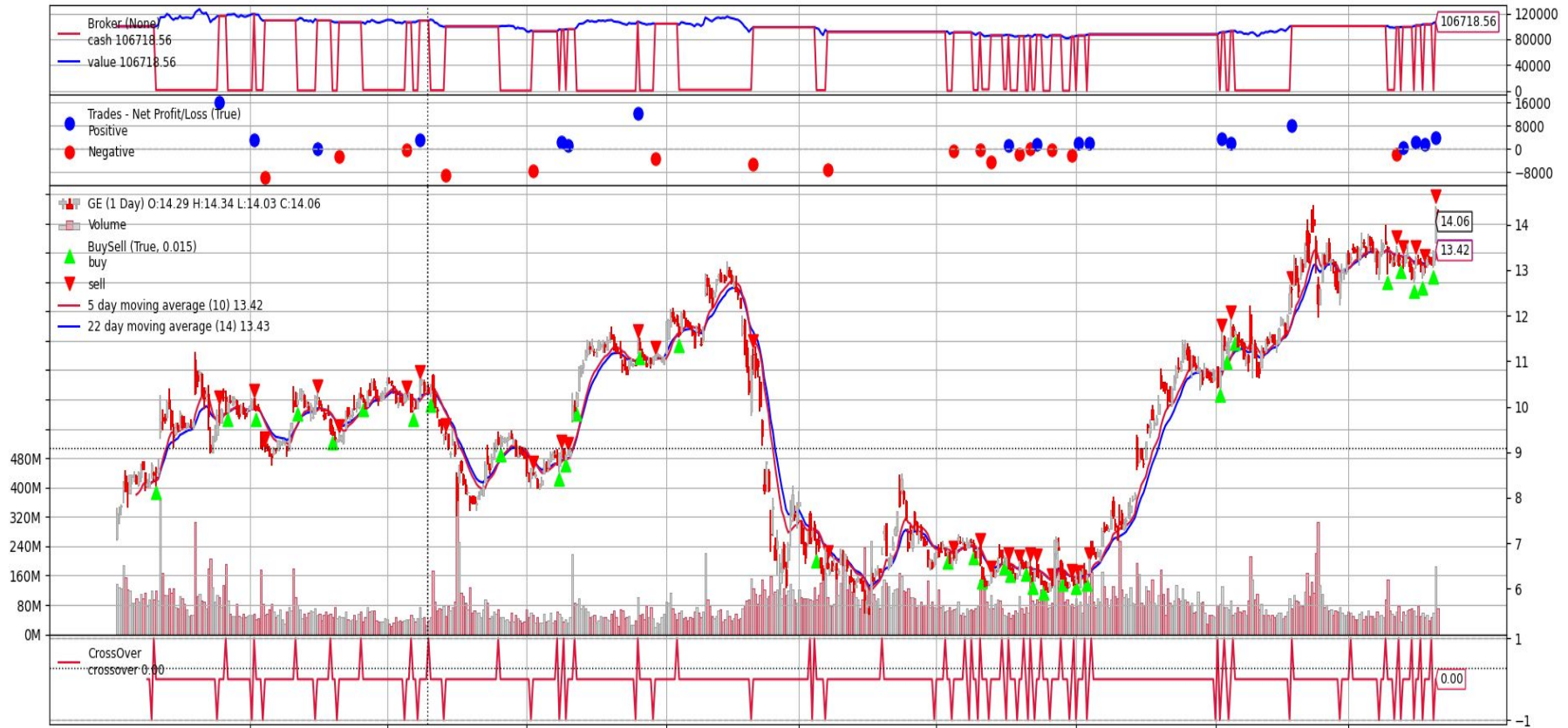
General Electric (GE)

Strategies Demonstrated

1. Moving Average Crossover
2. Golden Cross



General Electric - Plot Example



Trading Log Example

starting portfolio value: 100000.00

position size: 0

2019-11-06, Buy 9041 shares of stock at 10.95

2019-11-07, GE	Order: 4	Type: Buy	Status Accepted	Size: 9041.0000	Price: 10.9500
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Position: 9041

2019-11-07, GE	Order: 4	Type: Buy	Status Completed	Size: 9041.0000	Price: 10.9500
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Position: 9041

2019-11-07, GE	BUY	Price: 11.03	Cost: 99722.23	Comm: 0.00	Size: 9041.0000
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2020-03-16, Sell 9041 shares of stock at 6.63

2020-03-17, GE	Order: 5	Type: Sell	Status Accepted	Size: -9041.0000	Price: 6.6300	Position: 0
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0

2020-03-17, GE	Order: 5	Type: Sell	Status Completed	Size: -9041.0000	Price: 6.6300	Position: 0
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0

2020-03-17, GE	SELL	Price: 6.88	Cost: 99722.23	Comm: 0.00	Size: -9041.0000
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2020-03-17, GE Closed: PnL Gross -37520.15, Net -37520.1,

2020-11-10, Buy 6895 shares of stock at 8.97

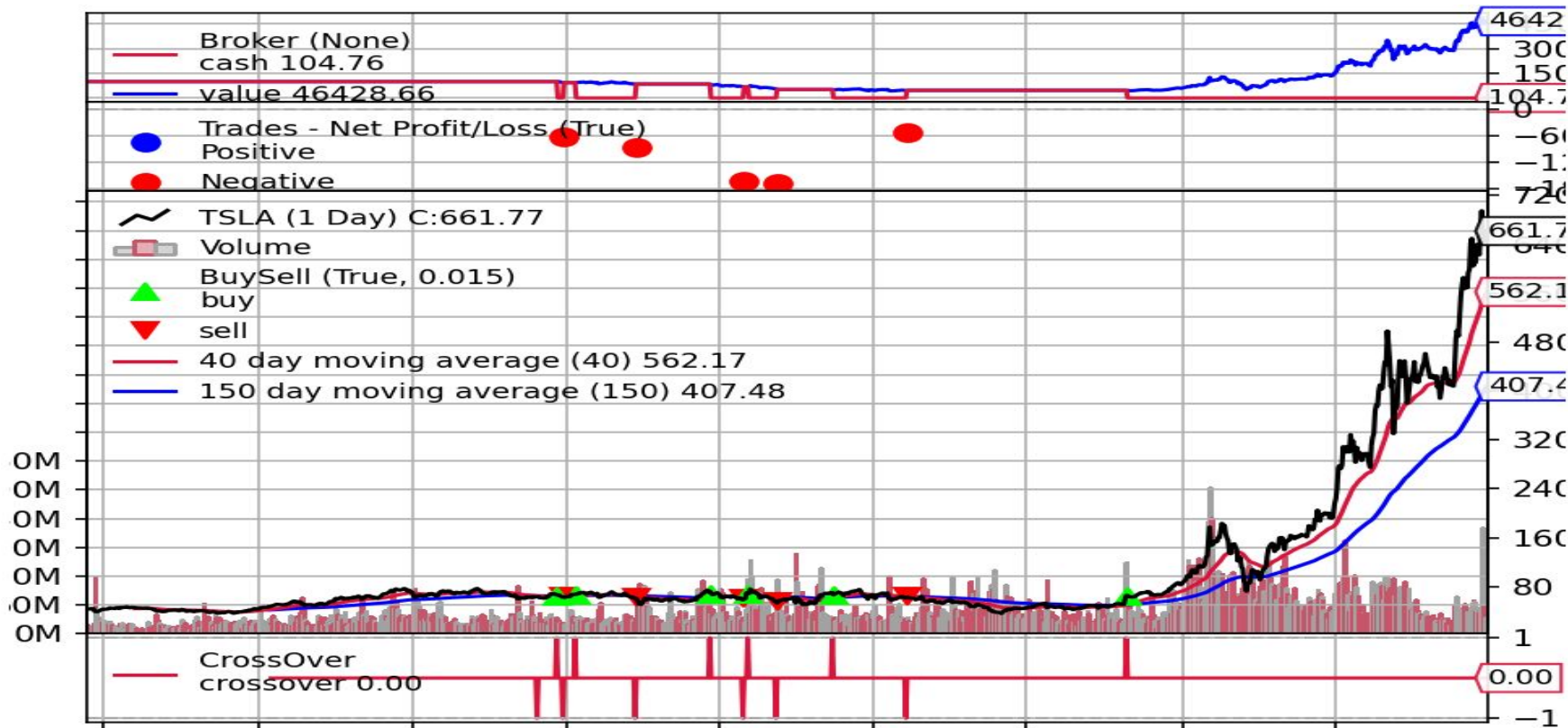
2020-11-11, GE	Order: 6	Type: Buy	Status Accepted	Size: 6895.0000	Price: 8.9700
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Position: 0

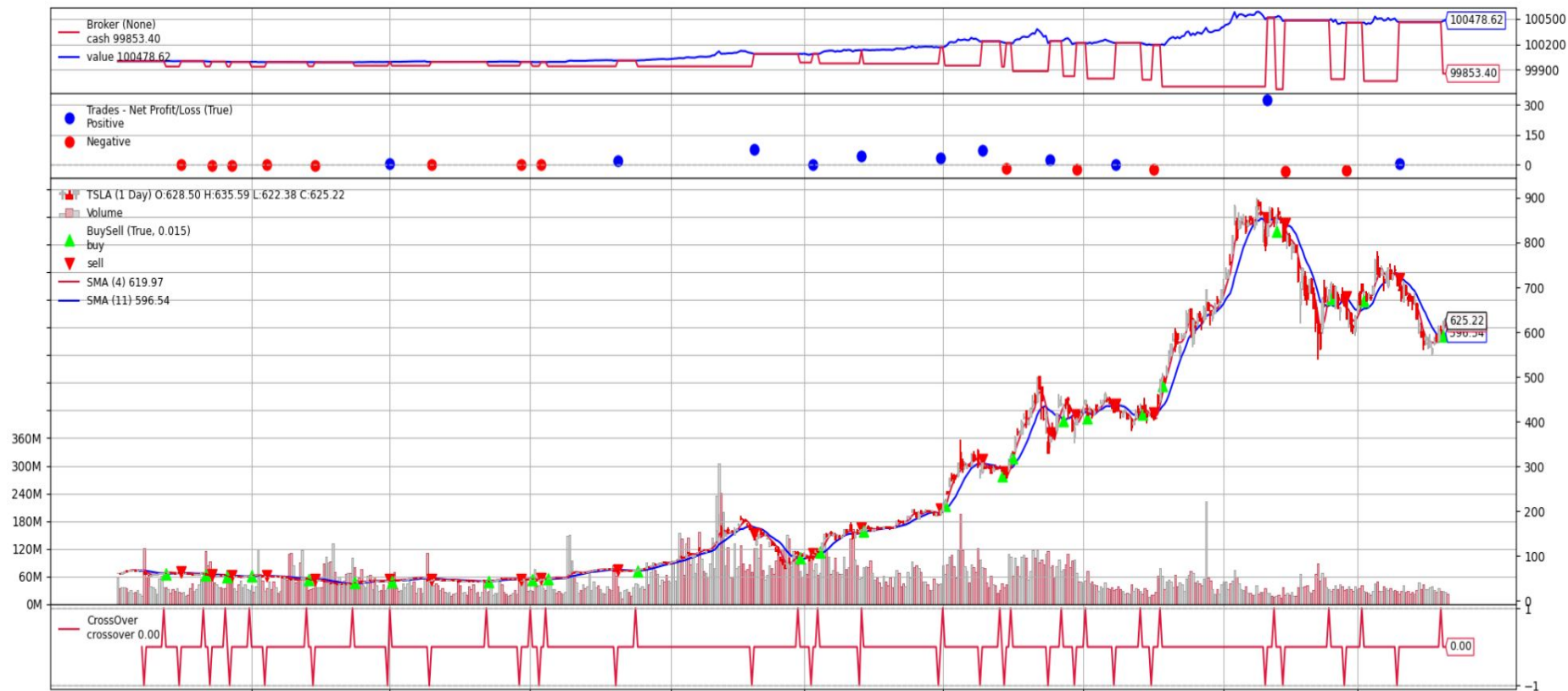
2020-11-11, GE	Order: 6	Type: Buy	Status Margin	Size: 6895.0000	Price: 8.9700	Position: 0
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final portfolio value: 62479.85

TSLA Golden Crossover



Tesla Moving Average Crossover



Live Demonstration