

Investment algorithms 1

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Type of oscillators

Moving averages

A Moving Average is a trend-following indicator that calculates the average price of an asset over a specific period. It smooths out price data to help identify the direction of the trend.

Relative Strength Index (RSI)

RSI is a momentum oscillator that measures the speed and magnitude of recent price changes to evaluate overbought or oversold conditions in an asset. It ranges from 0 to 100, with levels above 70 typically indicating overbought conditions and levels below 30 suggesting oversold conditions.

Stochastic Oscillator

A momentum indicator that compares an asset's closing price to its price range over a specific period, helping identify overbought (above 80) and oversold (below 20) conditions, as well as potential trend reversals.

MACD (Moving Average Convergence Divergence)

A trend-following momentum indicator that measures the relationship between two moving averages (typically the 12-day and 26-day EMAs) to identify bullish or bearish momentum through crossovers and divergences.



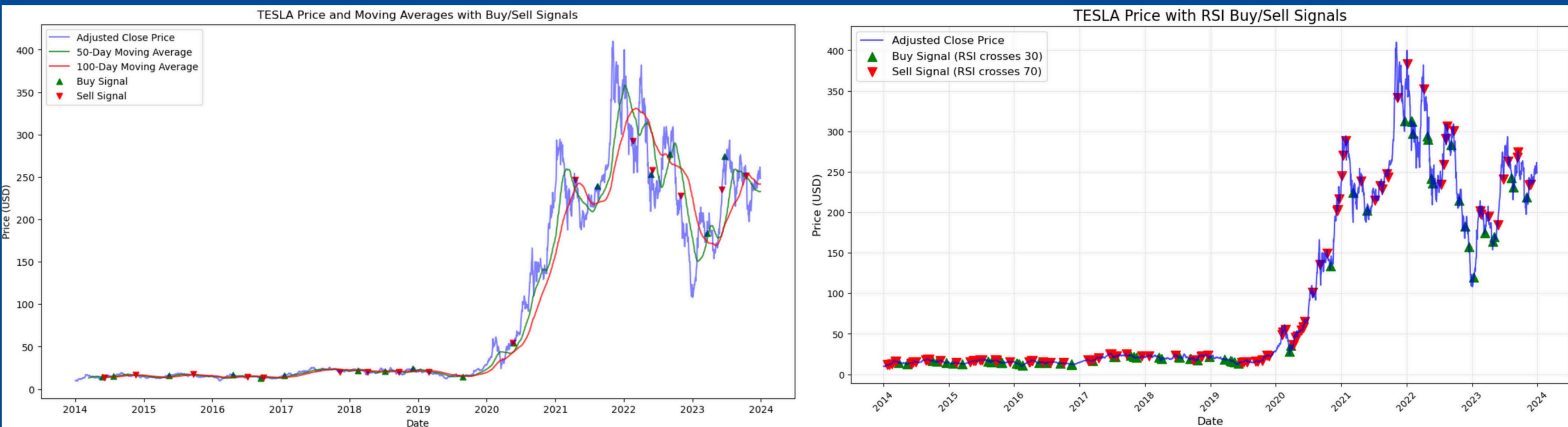


Final decision? MACD + Stochastic Oscillator

Sources:

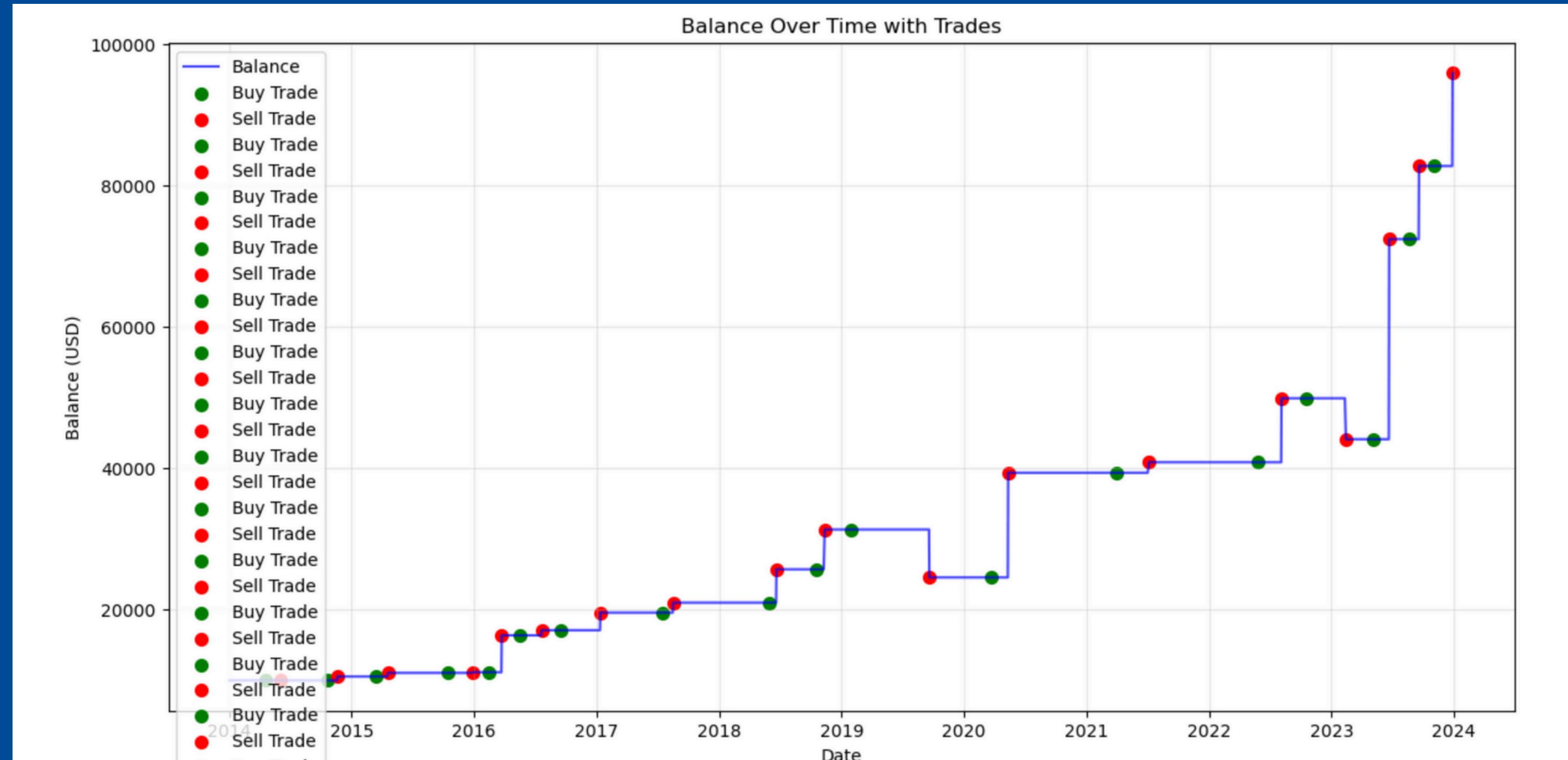
1. <https://quantstrategy.io/blog/mastering-macd-and-stochastic-combination-for-trading-success/>
2. <https://tradeciety.com/5-best-trading-oscillator-indicators-to-find-market-entries>
3. <https://www.investopedia.com/top-7-technical-analysis-tools-4773275>

MA and RSI for Tesla

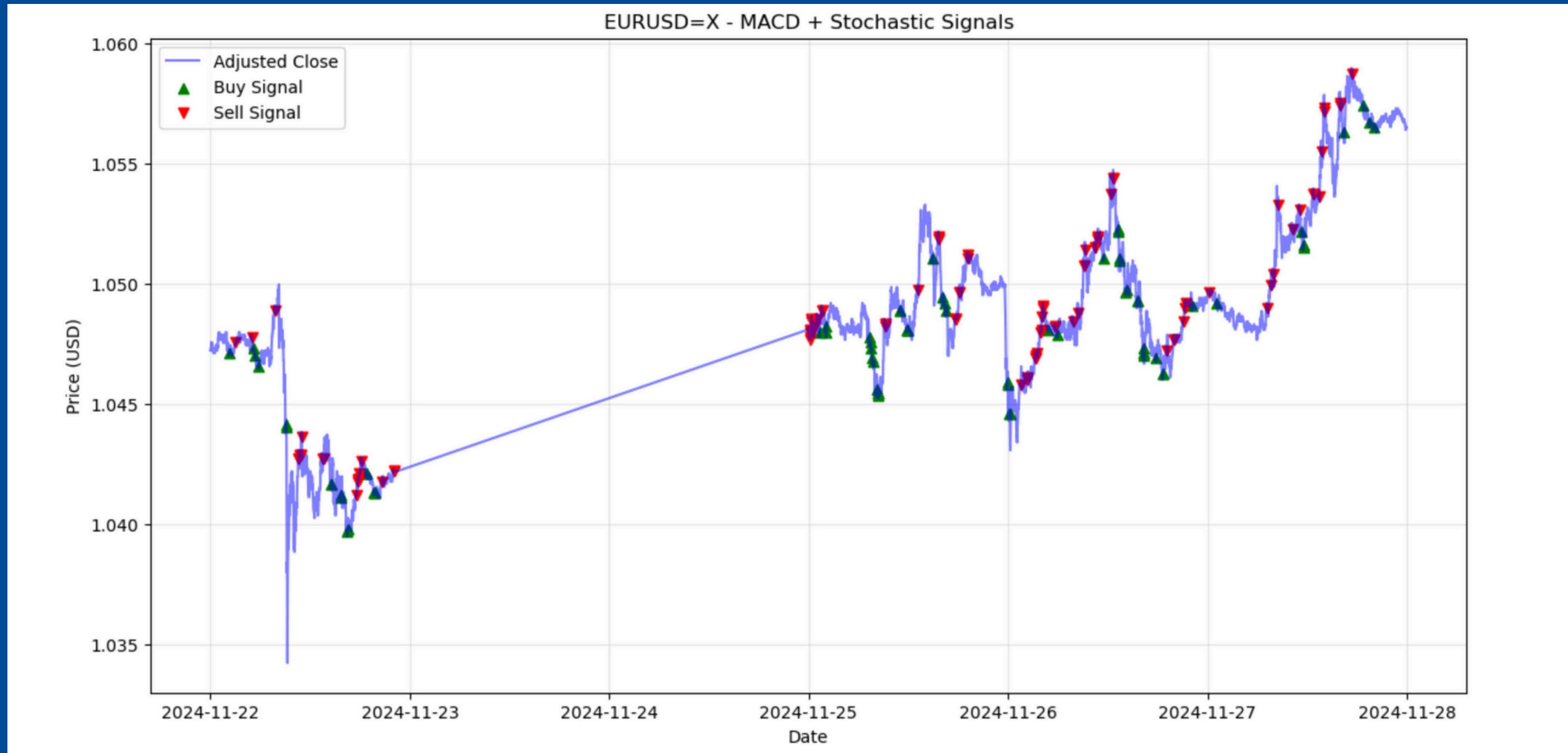


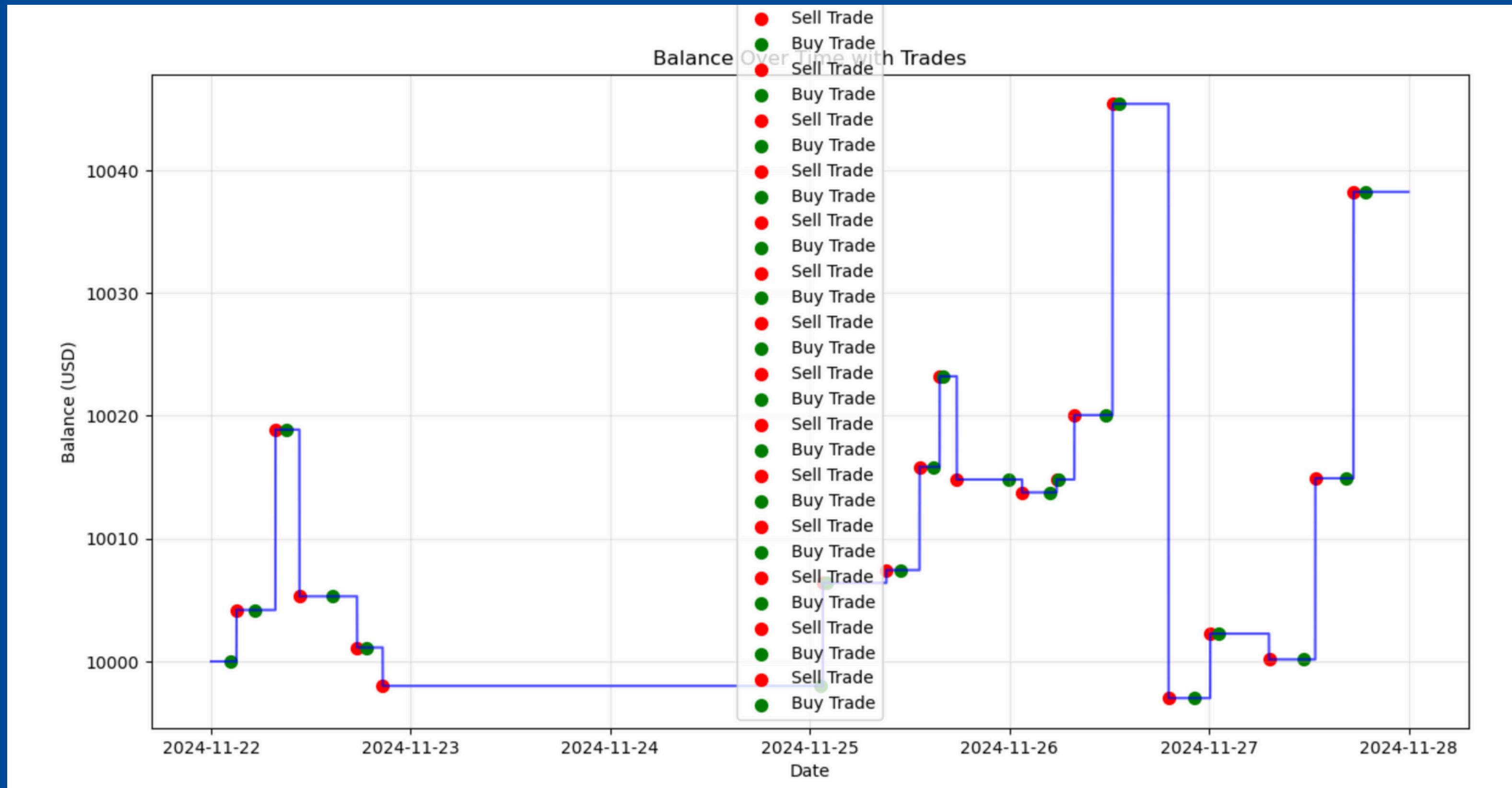
MACD + Stochastic for Tesla



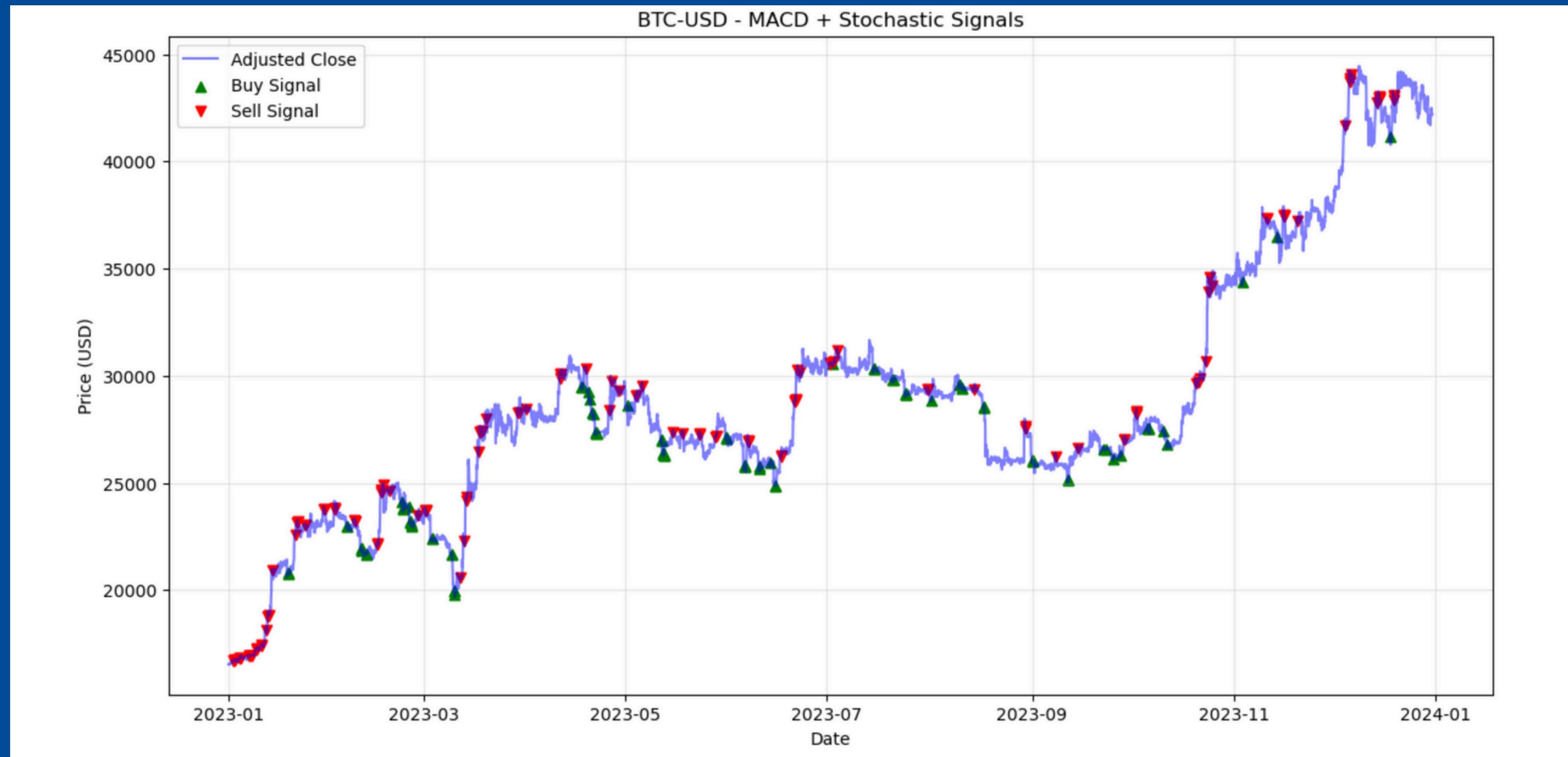


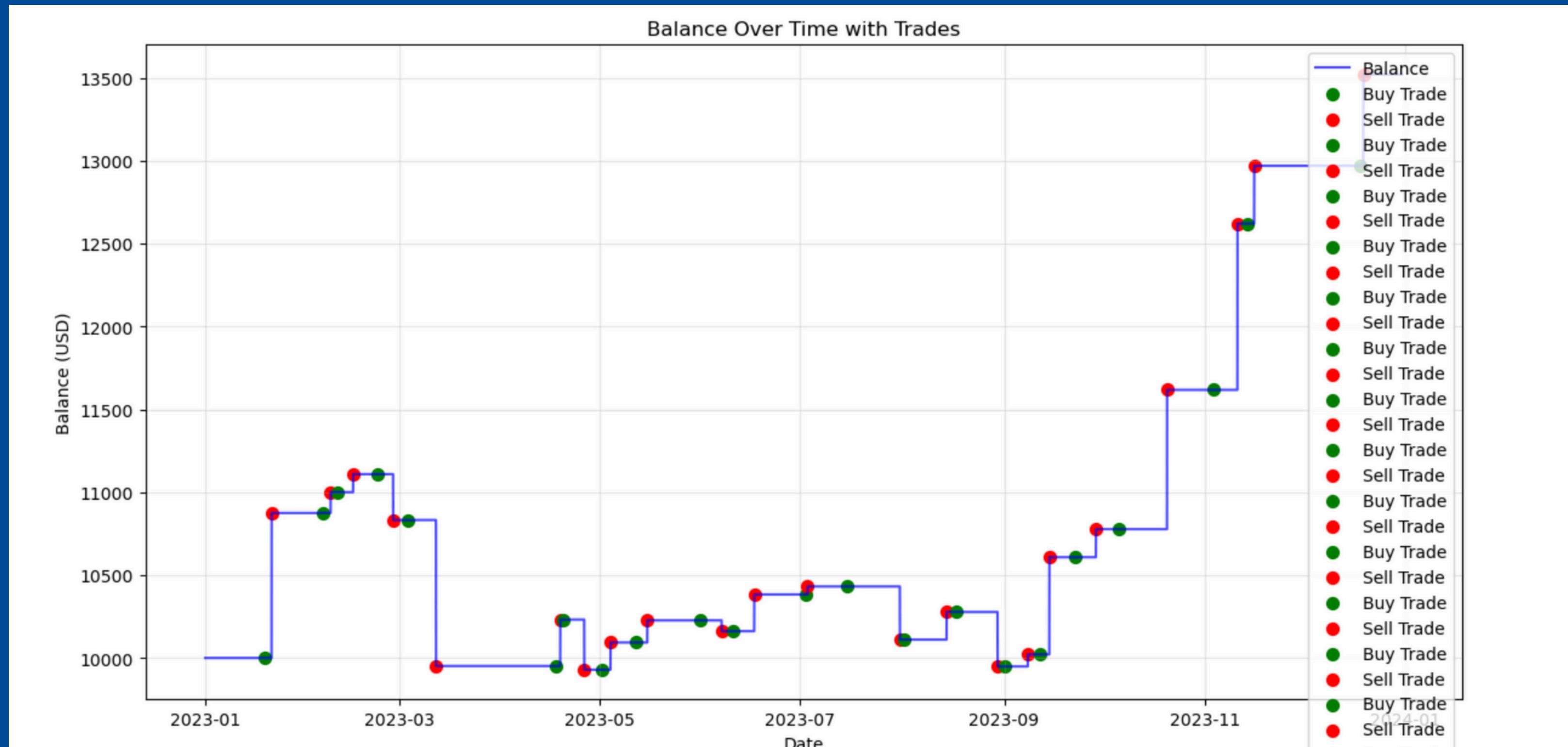
MACD + Stochastic for EURUSD



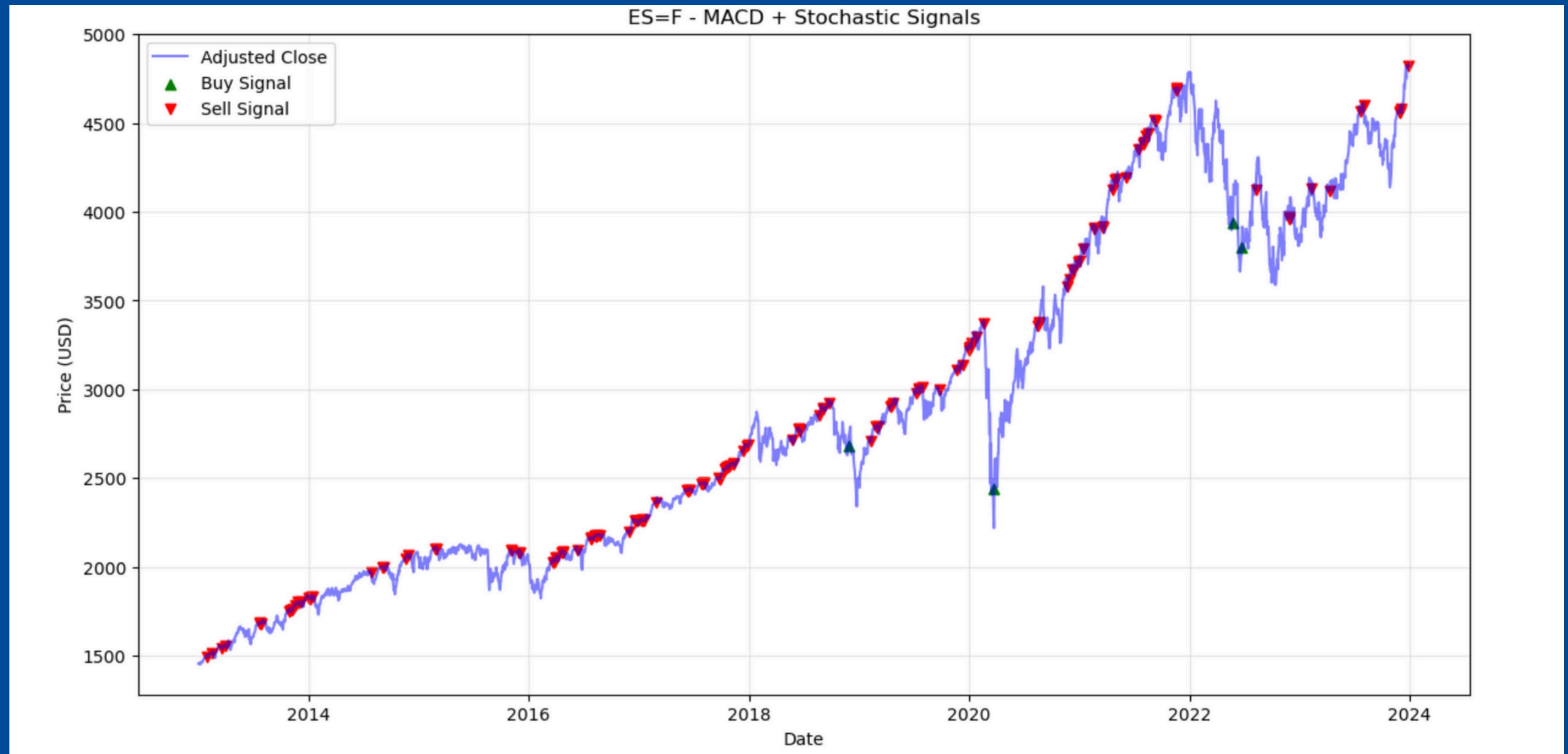


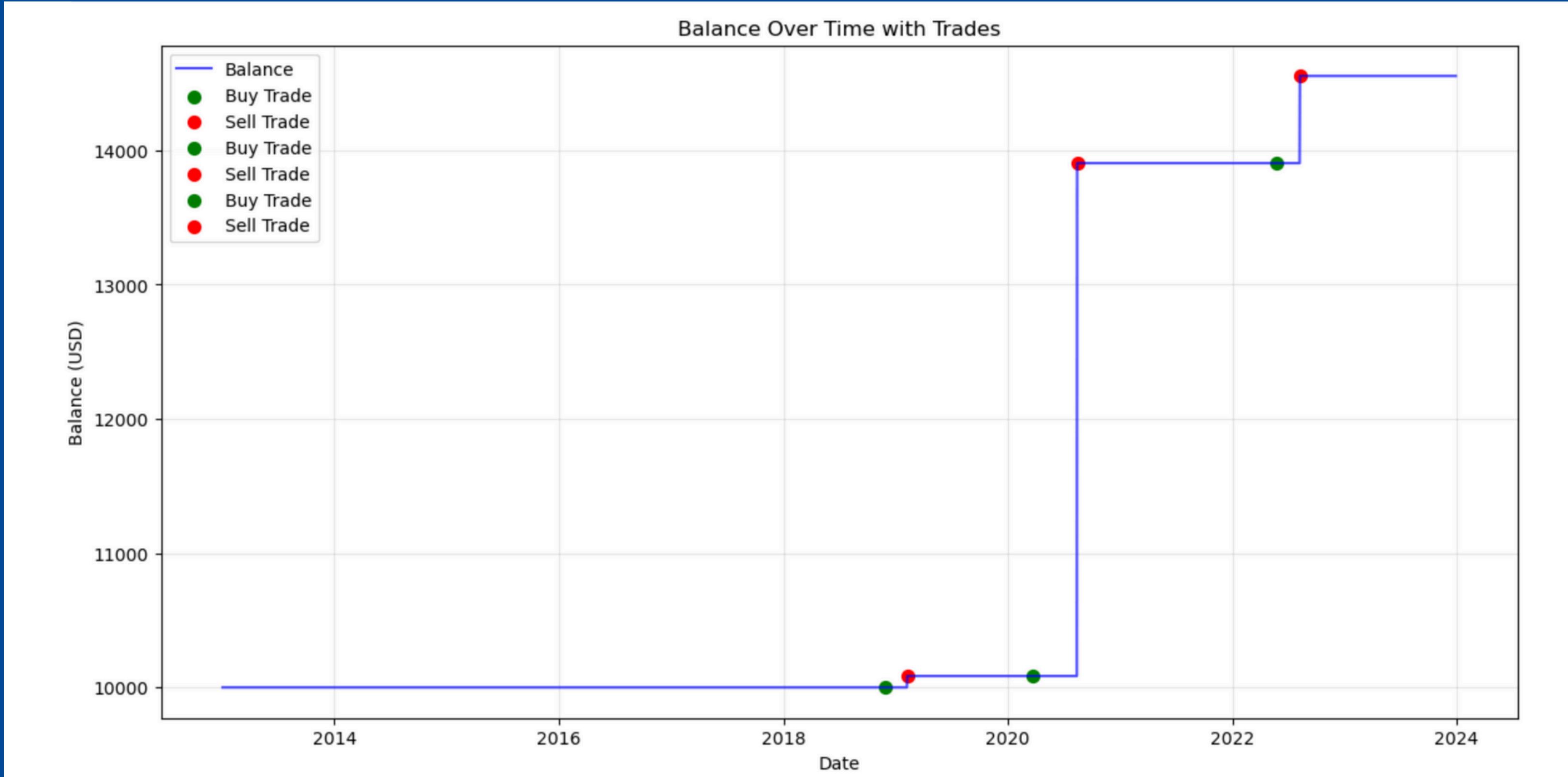
MACD + Stochastic for BTCUSD





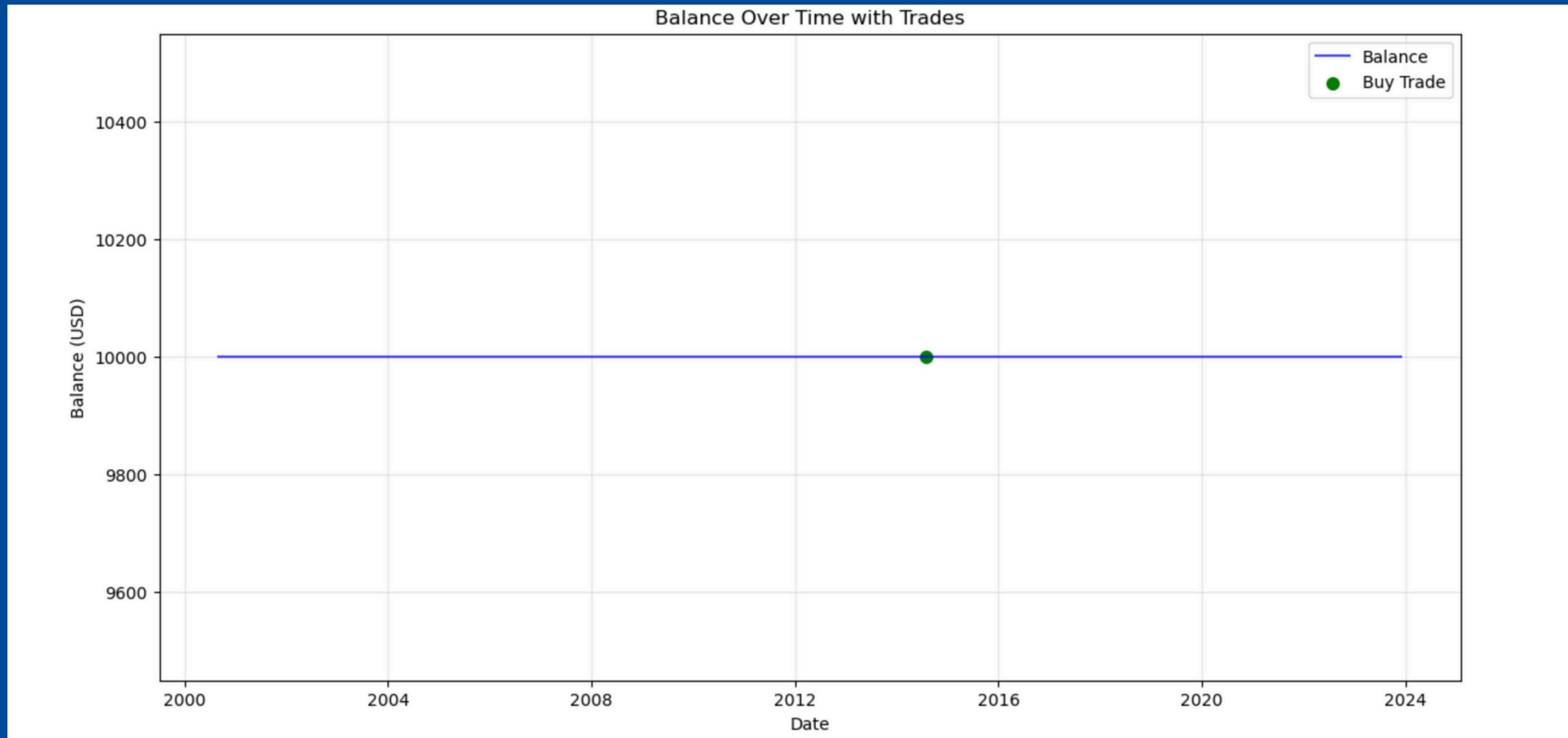
MACD + Stochastic for SPN500





MACD + Stochastic for Gold





Summary

$$\text{Profit Factor} = \frac{\text{Sum of Winning Trades}}{\text{Sum of Losing Trades}}$$

, if all trades are winning then we have 0 in denominator and it looks like infinity

	Total Return (%)	Win Rate (%)	Profit Factor	Max Drawdown (%)	Sharpe Ratio	type
0	859.221764	83.333333	7.823129	21.627262	2.539765	Stock TSLA
1	0.000000	0.000000	0.0	0.000000	0.000000	Gold
2	0.382428	63.157895	1.473172	0.481731	0.573763	Euro to PLN
3	35.197346	72.727273	2.618718	10.619304	1.737048	Bitcoin
4	45.541117	100.000000	All Profitable	0.000000	1.599337	S&P 500 Futures

Thank you for
your attention

