Financial Data Analytics with Python

Case study

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Algorithmic Trading Strategy Development and Performance Analysis in Cryptocurrency Markets

Introduction

- Trading Strategy - Three Moving Averages
- Instrument – BTC-PERPETUAL
- Approach – minute based trading
- Trading Platform – Deribit (Test)

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Data Collection

- Deribit API

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Methodology

- Three Moving Averages
- used windows (10, 20, 50 minutes)
- buy signal →
  - $(close > sma\_10) \land (sma\_10 > sma\_20) \land (sma\_20 > sma\_50)$
- sell signal →
  - $(close < sma\_10) \land (sma\_10 < sma\_20) \land (sma\_20 < sma\_50)$

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Live trading results

- Final Capital: 99927.0
- Profit/Loss Percentage: -0.073

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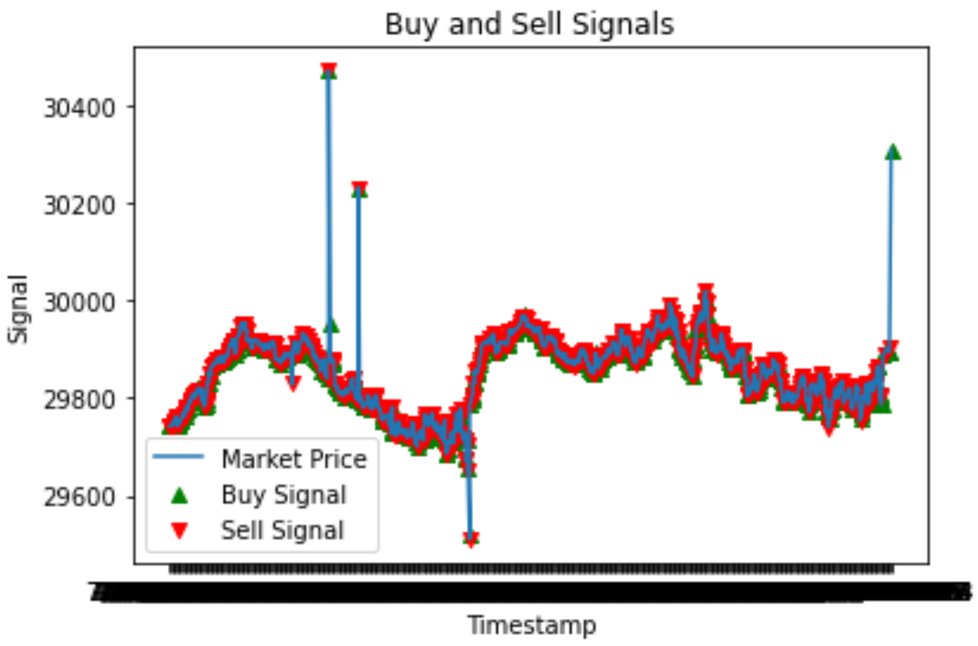
Live trading results



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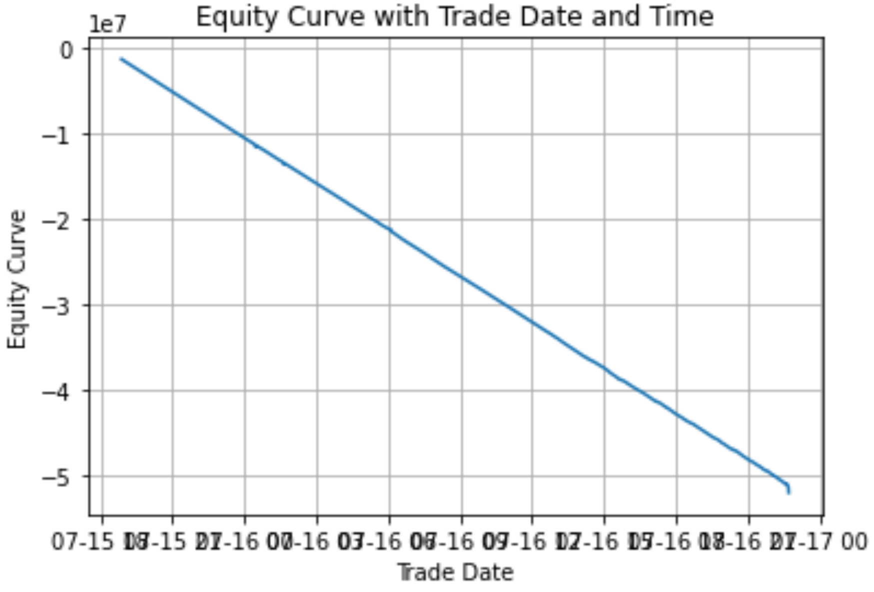
Results of Backtesting



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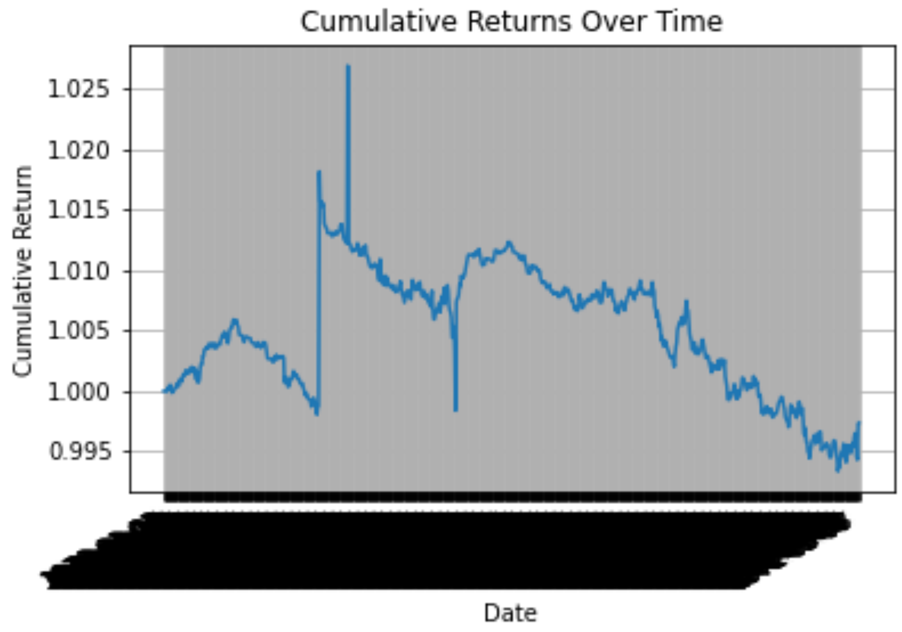

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Risk parameters of strategy results

- Volatility: 0.00037100385730145445
- Standard Deviation: 0.00037100385730145445

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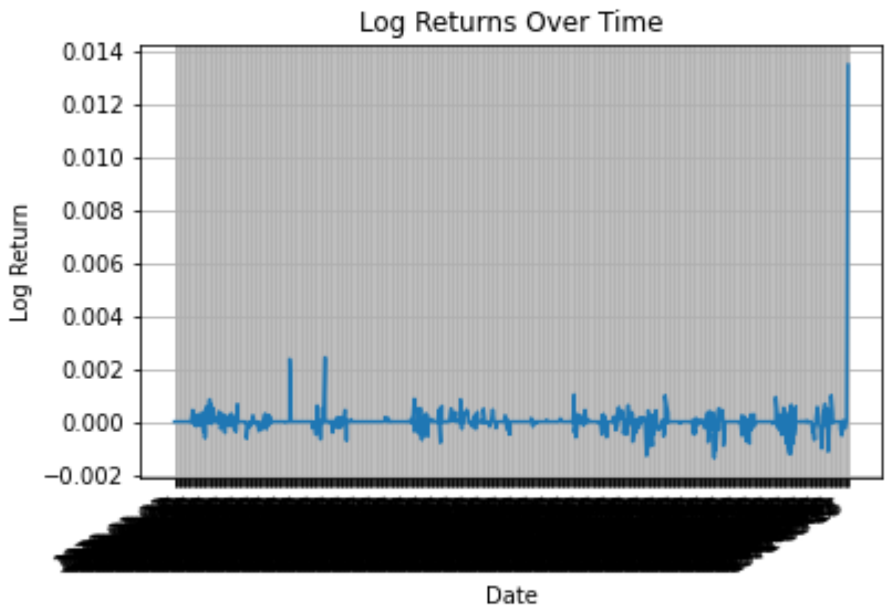
Logarithmic returns



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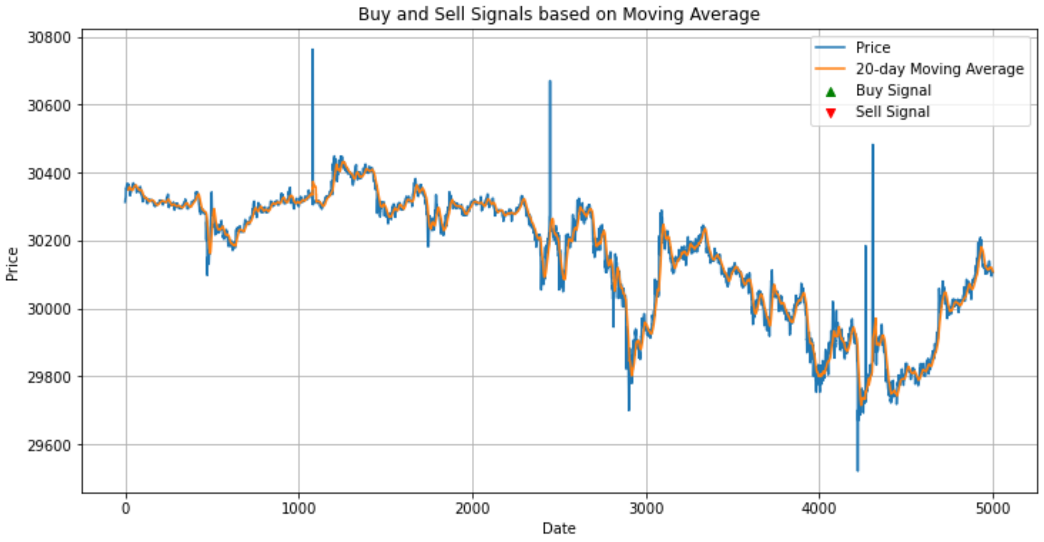
Comparison with Benchmark strategy Single Moving Average



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Comparison with Benchmark strategy Single Moving Average

- Final Capital: 100000
- Profit/Loss Percentage: 0.0

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Q&A