₿uy or $ell?

An Exploration of Day Trading Cryptocurrency

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Background Information

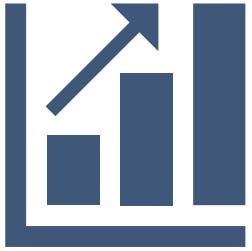
Formal Definitions of the Topics and Concepts Explored

Cryptocurrency

Decentralized digital money (utilizing blockchain technology) designed to be used over the internet.

Day Trading

Practice of purchasing and selling a security within a single trading day.



Dollar-Cost Averaging

Strategy where the total investment is divided across periodic purchases of a security to reduce the impact of volatility on the overall purchase.

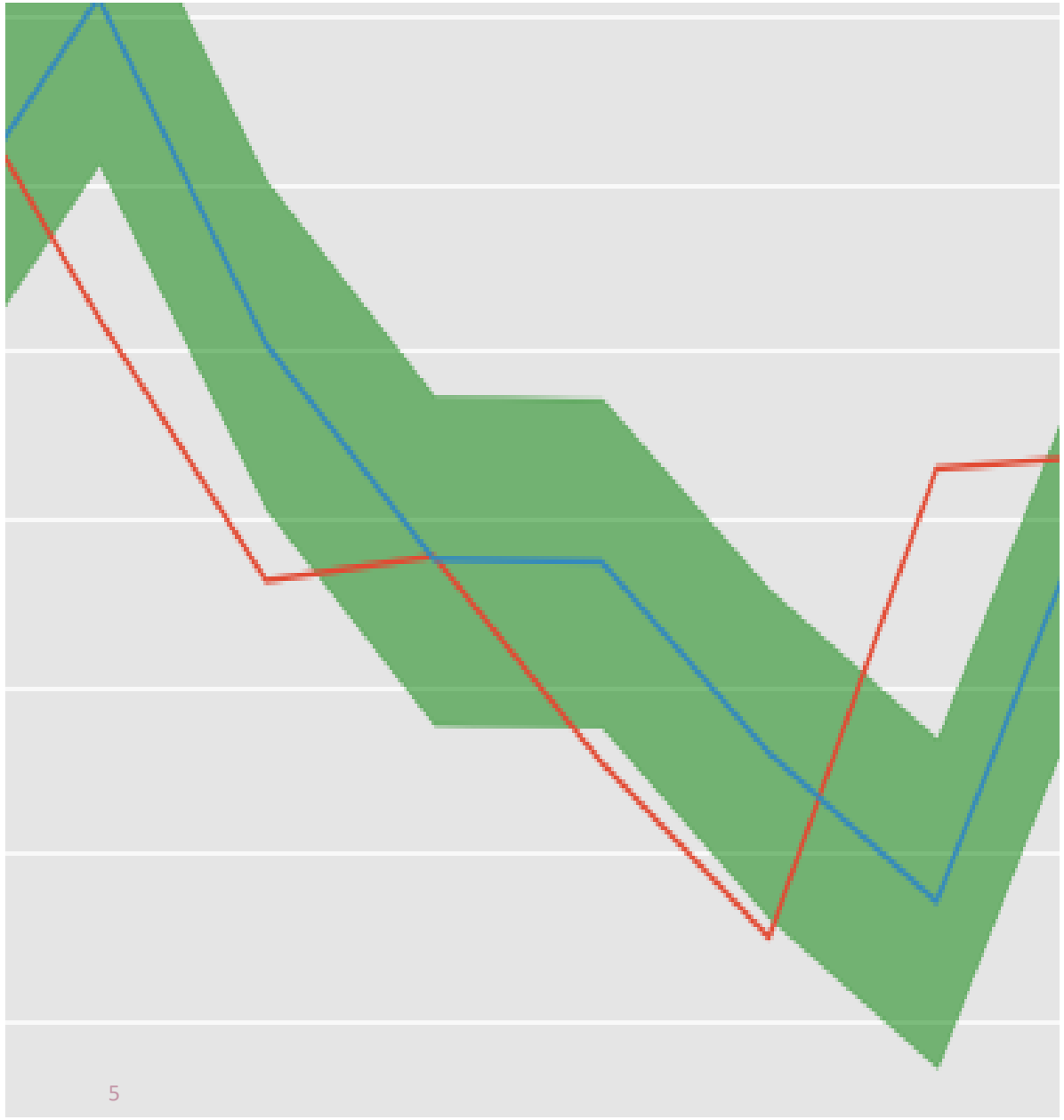
Problem

Use only historical data of target cryptocurrency to determine daily investment decision.

The Data

Historical opensource Bitcoin data obtained from Kaggle.

- Bitcoin is the first and largest cryptocurrency created to date (launched in 2008).
- Data consists of open, high, low, close, and tick volume values from March 20, 2011 to June 15, 2021.



The Model

- SARIMA model fitted to Bitcoin’s historical data.

The Application

- Bitcoin value predictions extracted from the model and put into practice.

Strategy Comparisons for the Last Month of Data

Simulation of investing a total of $1000 dollars in Bitcoin for the last month of data.

Singular Investment

- Invest all $1000 at once.

Dollar Cost Averaging

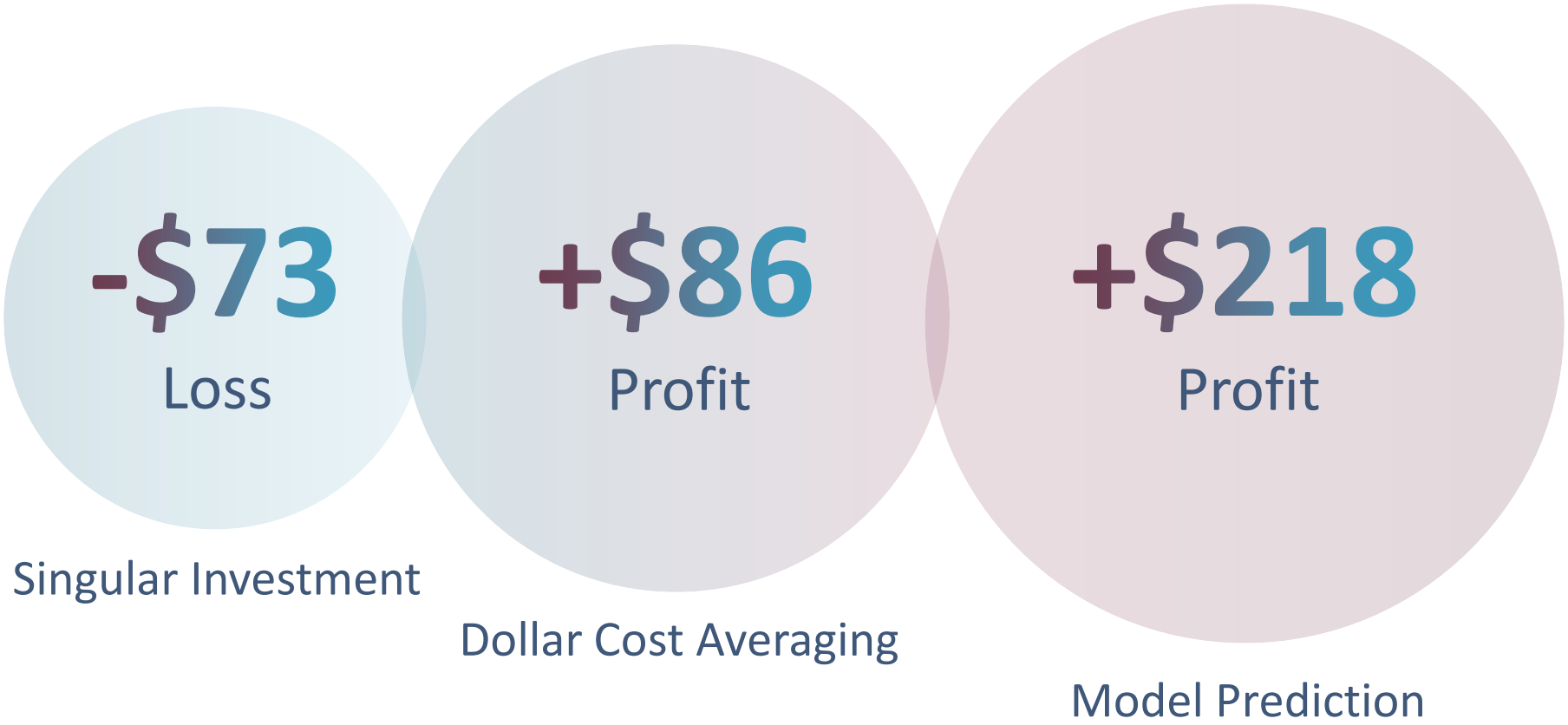
- Invest $35.71 per day (totaling $1000 over the course of 28 days).

Model Prediction

- Invest full amount (initially $1000 and all resulting profit or loss) when the model predicts an increase in value. Sell all shares when the market predicts a decrease in value.

Strategy Comparisons for the Last Month of Data

Net Profit/Loss for each strategy per $1000 investment simulation.



Conclusion

Model predictions do not guarantee profit or loss and must be further explored before putting into practice.

Model predictions should only be used as a tool to aid analysis and should not drive the investor’s decision making process. Used as a tool for simulation, it outperformed blindly investing and dollar-cost averaging.

Thank you!

For More Projects:

https://github.com/jj-yoon