Meme Trading - How to catch a ‘GameStop’

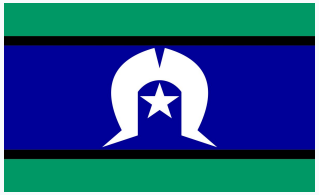
15 March 2022

Acknowledgement of Country

We acknowledge the Traditional Owners of the land on which we are hosting this presentation from.

We also acknowledge the Traditional Custodians of the various lands on which you all are working from today.

We pay our respects to Elders, past and present, and emerging and celebrate the diversity of Aboriginal people and their connection to the land and water of Victoria.



Meet the Team!

Adam Freeman

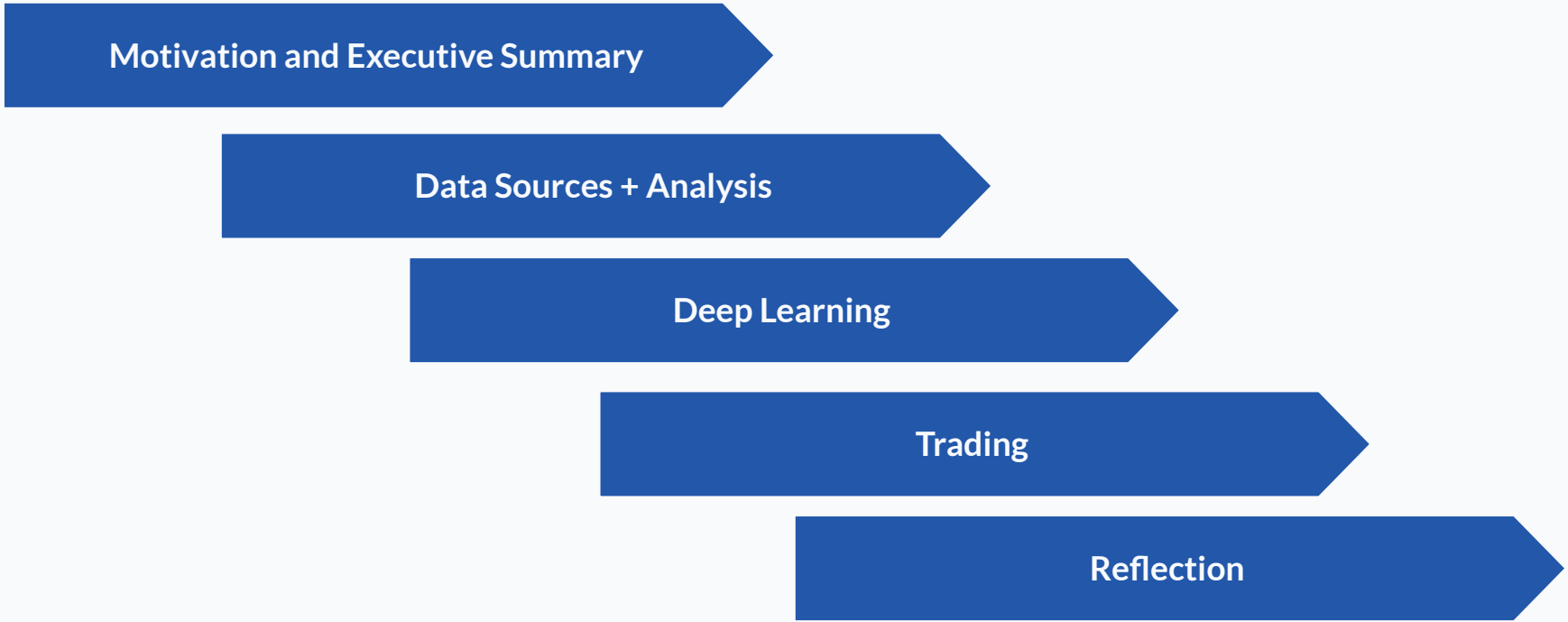
Jeryl Lim

Aidan Laird

Lincoln Luther

Kimberley Ng

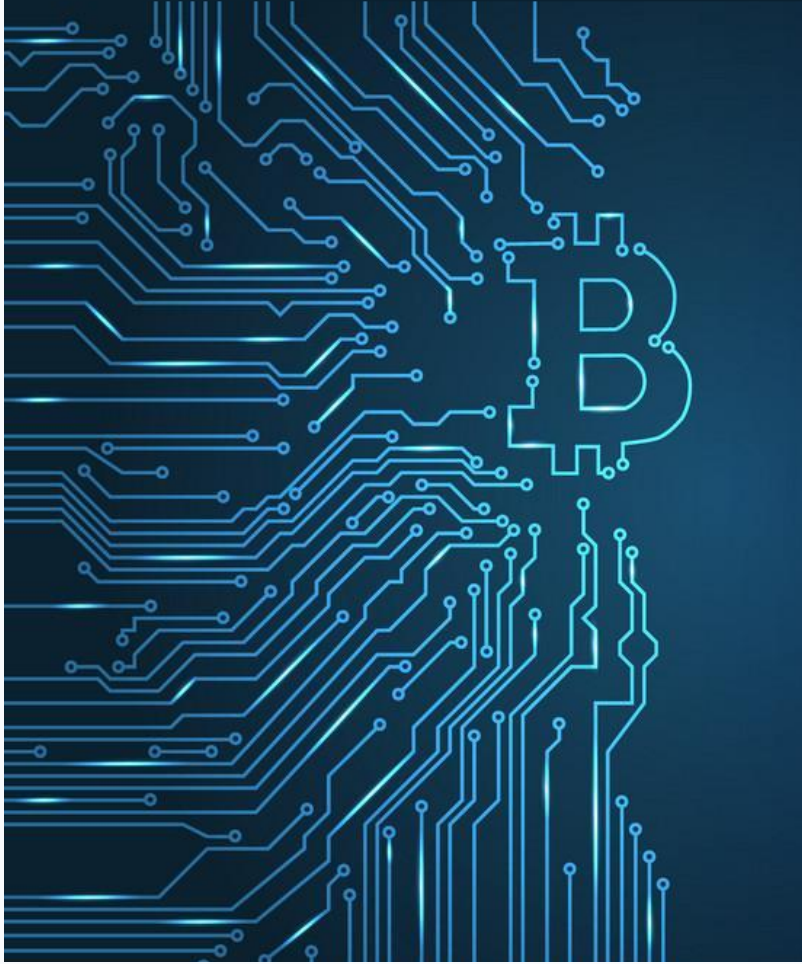
Presentation will consist of five main parts



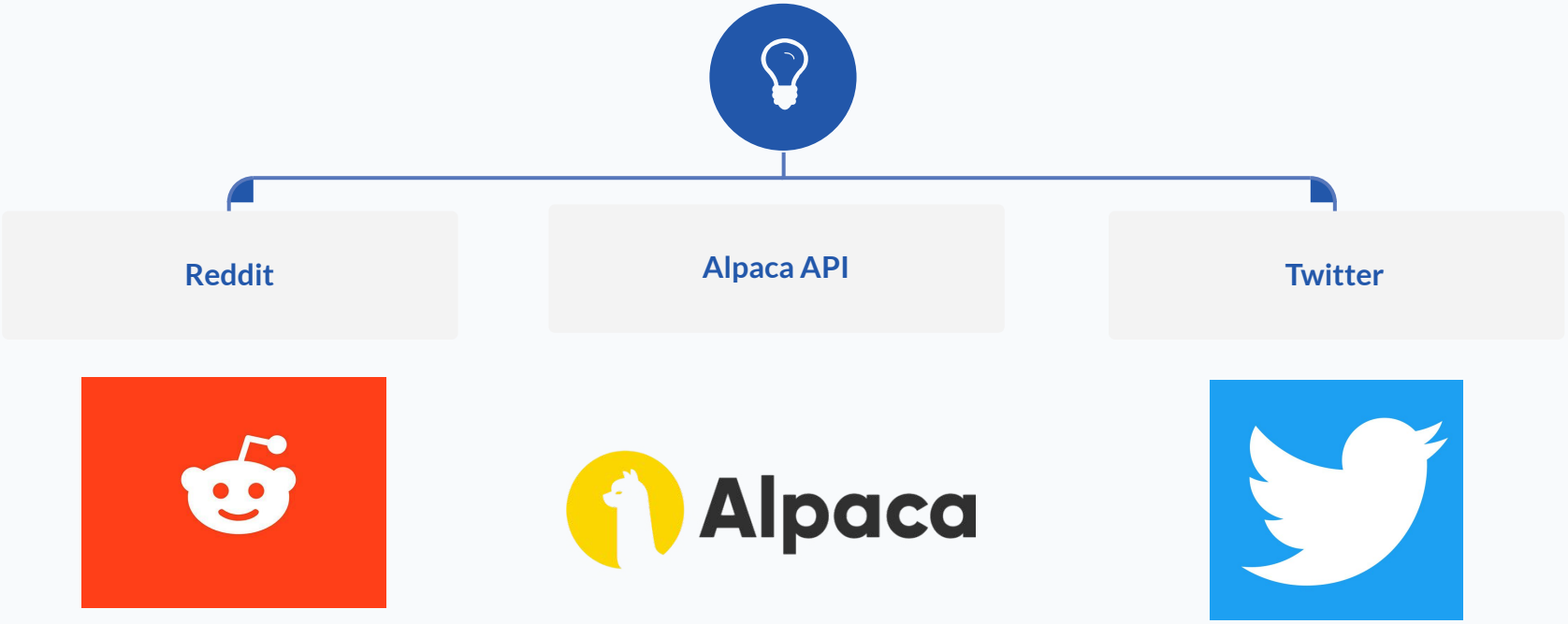
Executive Summary

Situation	With the rise of social media induced movements in the market is there a definite opportunity to capture such social sentiment to inform potential trading opportunities
Complication	However, using social sentiment alone could be risky
Question	How can we make smarter and more profitable trading decisions to limit our risk exposure but attempt to capture such phenomena in the market like Gamestop ?
Answer	A combination of fundamental and technical analysis • Fundamental analysis ⟶ identify overwhelmingly positive trending stocks on social media • Technical Analysis ⟶ do the technical indicators support the positive social sentiment

Data Sources and Analysis



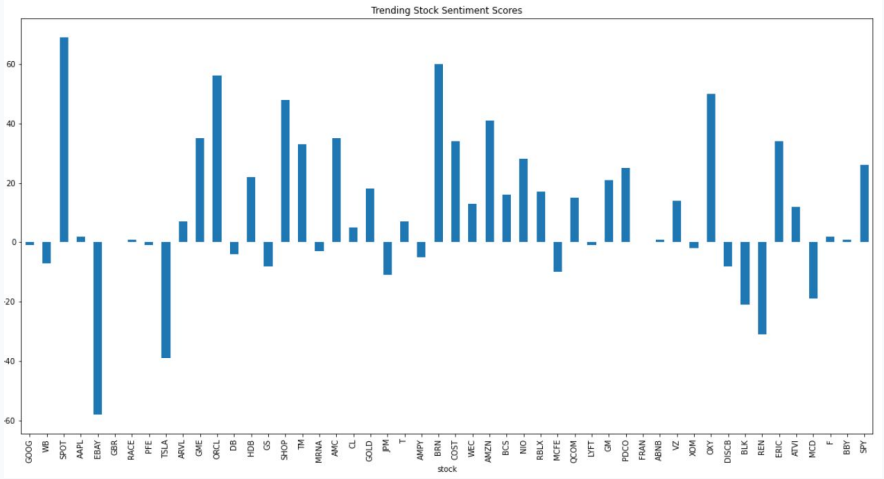
Step 1: Fundamental analysis comes from three data sources



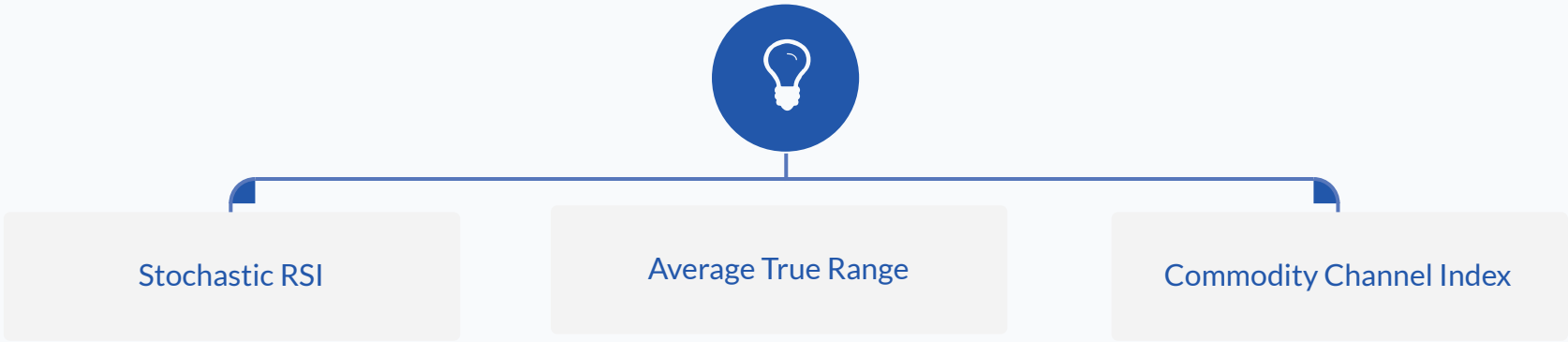
Fundamental Analysis

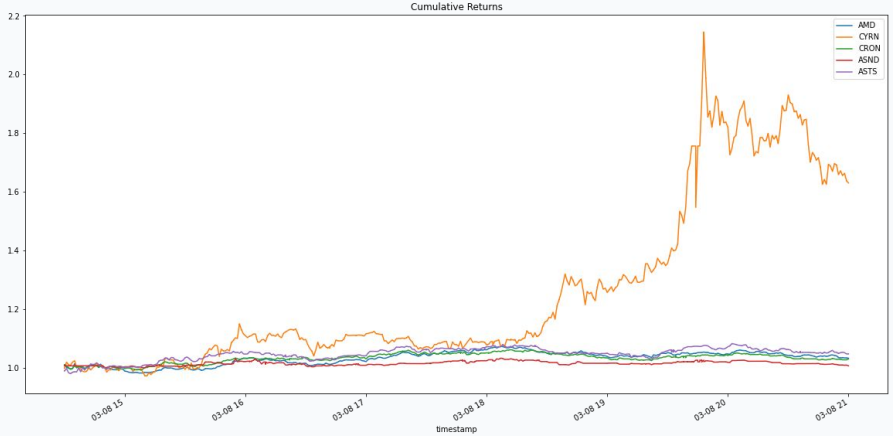
- Dynamic clustering based on K-means
- K-means curve ⟶ number of features relevant
- Reduced dimensions with PCA
- Classification ⟶ choosing the best cluster

Outcome: narrowing down to 10 stocks from 500 based on sentiment scores, averaged over 30 days



Step 2: Technical analysis on three technical indicators



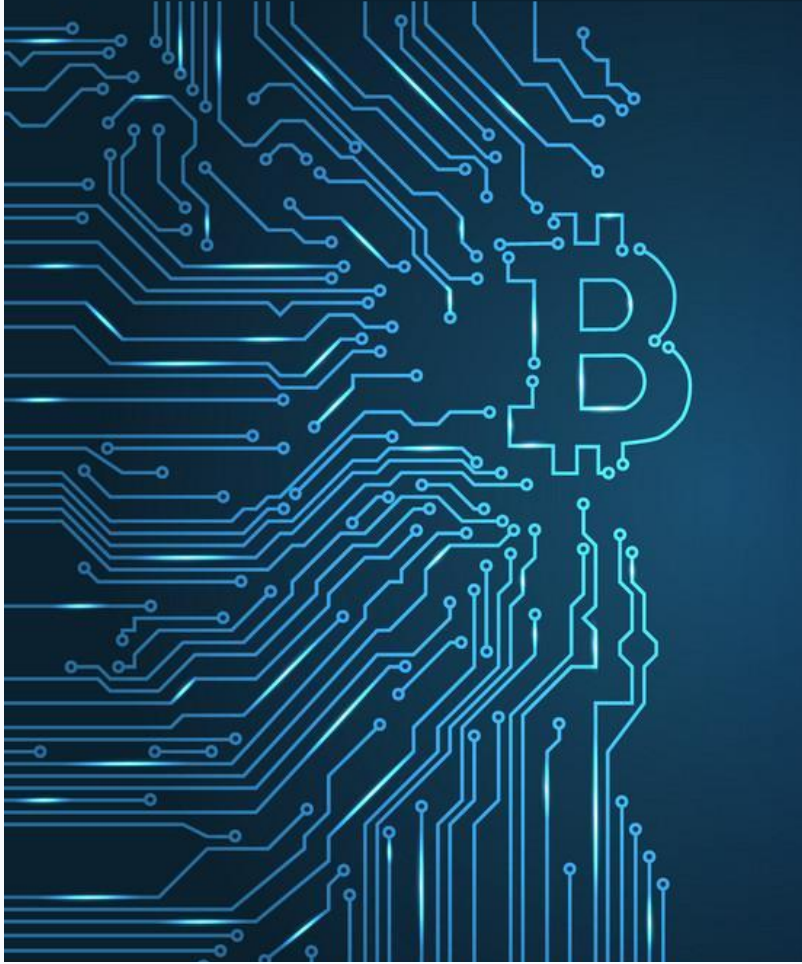


Technical Analysis

- Retrieve ohlcv data with Alpaca API
- Calculate full list of technical indicators
- Reduce to 3 key indicators
- Calculate key indicators at daily time frame intervals and store with close price

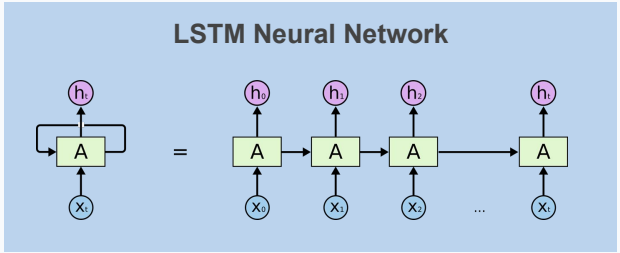
Outcome: Create the appropriate feature and target sets for deep learning algorithm next

LSTM Neural Network



Step 3: Training the LSTM neural network for each candidate stock

Training dataset for stock XYZ



Validation loss

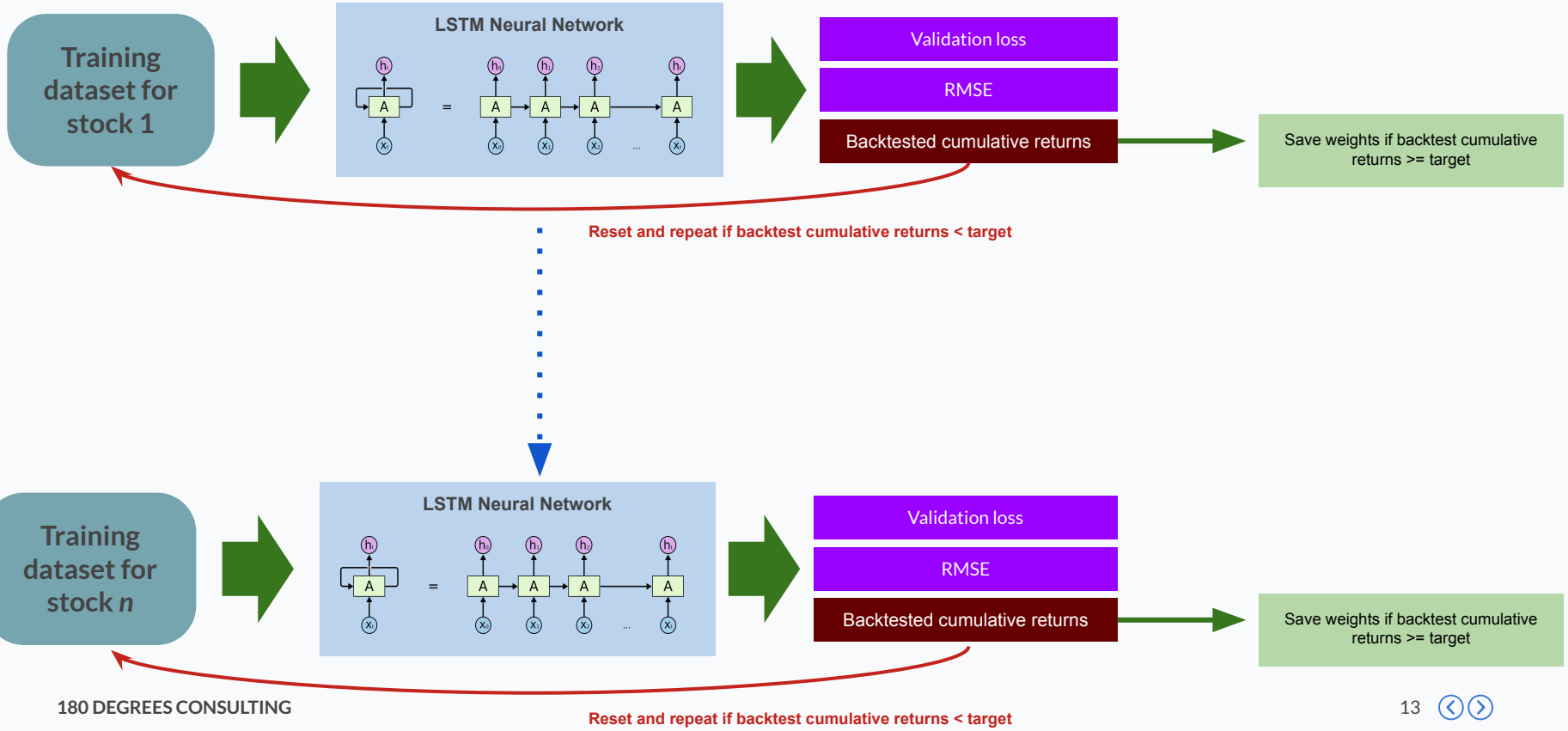
RMSE

Backtested cumulative returns

If returns < target, reset and repeat until max iteration i

If returns >= target, save model/weights and move on to next stock

Step 3: Training the LSTM neural network for each candidate stock

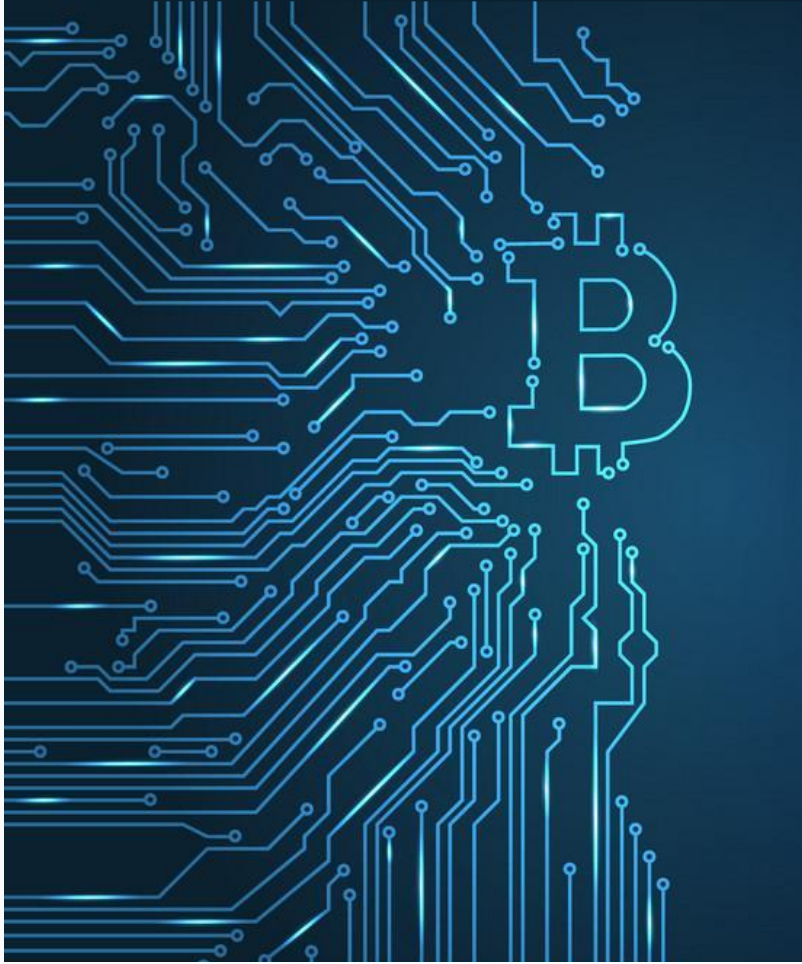


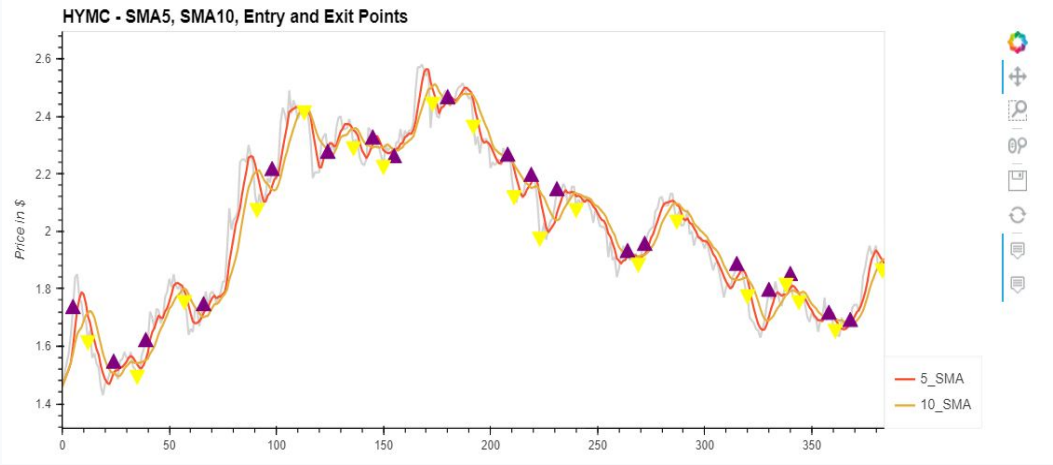
Visualising model predictions and cumulative returns on backtesting

Step 4: Produce trading signals using trained models

symbol	trading_signal
BCS	0
KKR	0
MX	0
NTES	1
SHOP	0
VZ	0
WEC	0

Trading with Model Predictions



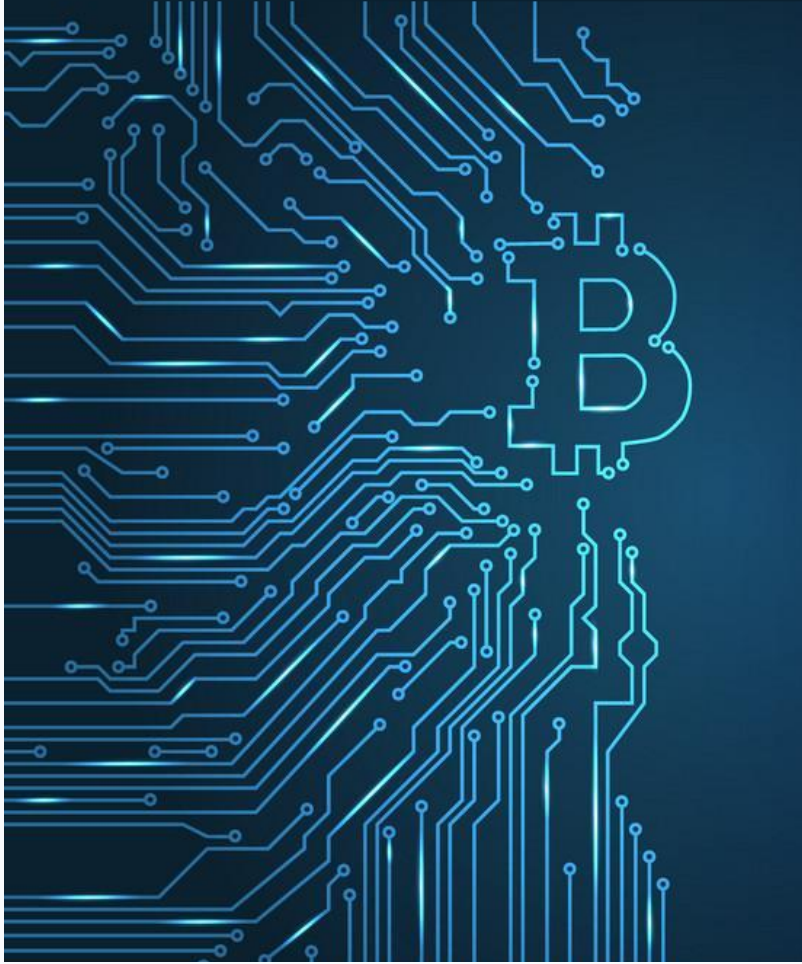


Trading

- Through multiple layers of analysis our algorithm has generated a buy list of stocks
- Trades are executed for these stocks at market open
- Backtest module assists testing different entry and exit strategies

Outcome: Stocks are purchased at next market open as determined by the algorithm layers above

Reflection



The Project can assist users in four ways

More effective stock picking

More profits

More accurate forecasting

Know when to buy/sell

We faced three challenges in this project

Integrating into Streamlit

Aligning time windows of data

Obtaining meaningful sentiment data

Q&A