



The Coin Whisperer

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USYD FinTech Bootcamp July-2023

AGENDA

- Project Overview
- All Things Data
- The How? *Our Approach*
- DEMO
- The Results
- Future Direction

Shayan

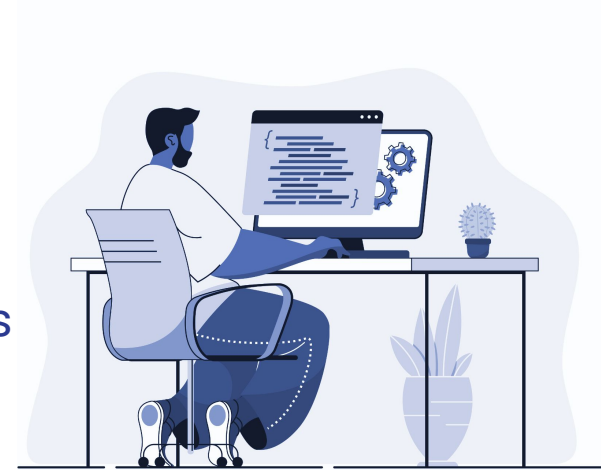
Yanbo

Yanbo

Wasseem/Ferdows

Wasseem

Shayan



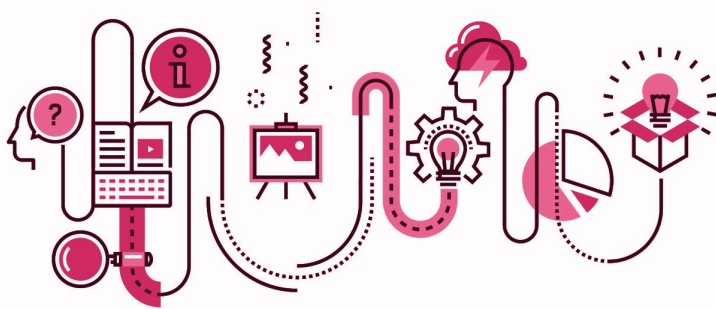


Project Overview

An Executive Summary

The Coin Whisperer Concept

Create the ultimate crypto trading machine



- Take desired crypto ticker
- Consider available historical data
- Perform machine learning (ML) analysis on the data
 - ◆ See next slide for details
- Outputs of ML analysis to be compared and validated
- Add sentiment analysis to the mix and use the combination to:
- Recommend trading strategy (buy/sell and price)
- Output to be displayed and executable on a webpage

Machine Learning Models - More Details

1 Logistic Regression

- Discrete value for signal
- Determine if predictions are worse/better than actual returns

2 Linear Regression

- Continuous Prediction of price
- Plot to visualise

3 GARCH

- Predict the volatility of the return
- Useful to assess risk and expected returns

4 SVM

- Performs well with limited amounts of data
- Determine if predictions are worse/better than actual returns - Compare with 1

5 Neural Networks

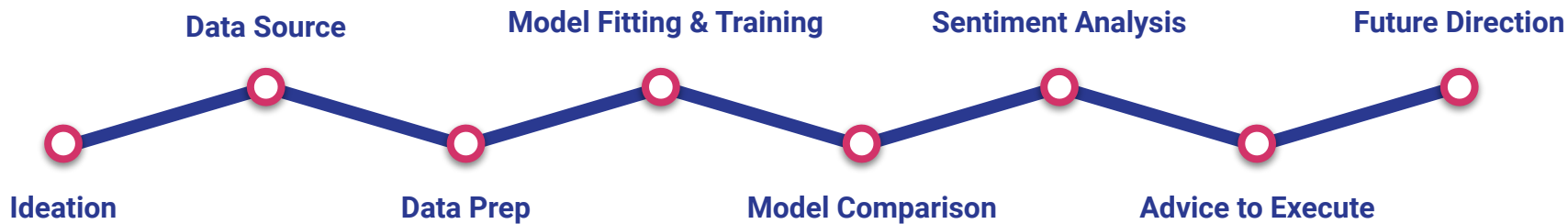
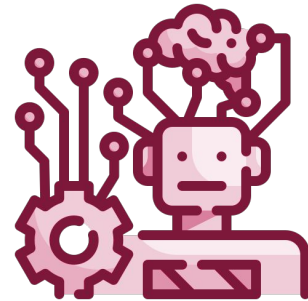
- Analyse price data to uncover opportunities
- Can complement other models

6 Prophet

- Good for forecasting time series data
- Readily applicable to our use case

All Things Data

Data Prep and Model Fitting



The How?

Our Approach

A complex financial chart background featuring a dark blue grid. It includes a world map silhouette in the upper left, a candlestick chart with green and red bars, and several overlapping line graphs in shades of green and blue. Numerous numerical data points are scattered across the chart, such as 51.298, 78.222, 49.651, 18.158, 32.658, 10.552, 8.668, 7.352, 8.668, 43.99, 0.34, 7.58, 2.743, 61, 14.2, 36.662, 18.156, 85.224, and 2.345.

Demo (coming up)
Model Evaluation
Challenges and Insights



Demo

The Results

- ML Outputs Compared
- Deep Dive on Linear Regression vs Prophet
- Basic Sentiment Analysis Applied
 - ◆ Fear and Greed index from CNN
- Order Placed on Alpaca
- Outputs Displayed on Webpage



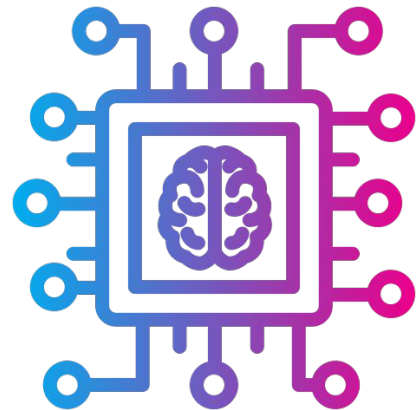
Future Direction

- Web Based Graphical User Interface:
 - ◆ Ability to freely choose ticker
 - ◆ Ability to choose from multiple machine learning models
- NLP based robo advisor on webpage to assist with analysis request and placing orders
- True sentiment analysis (not just fear and greed factor)
 - ◆ Our current approach is using the “fear and greed index” as a proxy for sentiment analysis



Links

- [GitHub Repo Link](#)
- [Project Folder](#)
 - [Meeting Notes and Project Doc](#)
- [The Coin Whisperer Webpage](#)



References & Resources:

- https://edition.cnn.com/markets/fear-and-greed?utm_source=business_ribbon
- <https://pypi.org/project/fear-and-greed/>
- <https://stackoverflow.com/questions/9622163/save-plot-to-image-file-instead-of-displaying-it>
- <https://arch.readthedocs.io/en/latest/univariate/generated/arch.univariate.GARCH.html#arch.univariate.GARCH>
- <https://www.investopedia.com/terms/g/garch.asp#:~:text=GARCH%20is%20a%20statistical%20modeling,an%20autoregressive%20moving%20average%20process>
- <https://www.capitalone.com/tech/machine-learning/what-is-logistic-regression/>
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- [https://www.investopedia.com/articles/trading/06/neuralnetworks.asp#:~:text=Neural%20networks%20do%20not%20make,using%20traditional%20technical%20ana
lysis%20methods](https://www.investopedia.com/articles/trading/06/neuralnetworks.asp#:~:text=Neural%20networks%20do%20not%20make,using%20traditional%20technical%20analysis%20methods)
- <https://facebook.github.io/prophet/#:~:text=Prophet%20is%20a%20procedure%20for,several%20seasons%20of%20historical%20data>
- Presentation images/artwork from Google Images



Thank you

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