Quantitative Trading Strategy

Decentralized Mayhem

FAST NUCES

Quantitative analysis

Quantitative analysis is a technique that seeks to understand behavior by using mathematical and statistical modeling, measurement, and research. Quantitative analysts aim to represent a given reality in terms of a numerical value. Price and volume are two of the most common data inputs used in quantitative analysis as the main inputs into the mathematical models. Quantitative trading strategies include high-frequency trading, algorithmic trading, and statistical arbitrage. Most of the Quantitative trading strategies are either Trend Following or Mean Reversion based. Both are dependent on market conditions.

Decentralized exchange

A decentralized exchange (DEX) is a cryptocurrency exchange which operates in a decentralized way, i.e., without a central authority. Decentralized exchanges allow peer-to-peer trading of cryptocurrencies.Because users do not need to transfer their assets to the exchange, decentralized exchanges reduce the risk of theft from hacking of exchanges. Decentralized exchanges can also prevent price manipulation or faked trading volume through wash trading, and are more anonymous than exchanges which implement know your customer requirements.
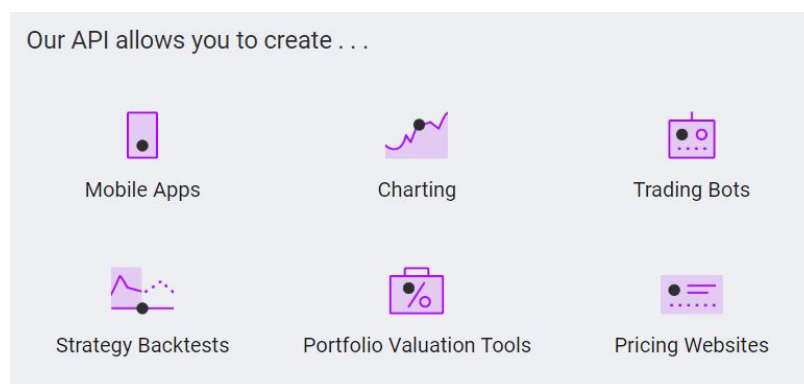
Their Role
They will be providing us with the cryptocurrencies data and we will be sending them automatically generated transactions for buying and selling cryptocurrencies.

Data extraction
We will be using a free API from nomics(https://p.nomics.com/cryptocurrency-bitcoin-api) which will provide us with the realtime and historical rates of cryptocurrencies.

Some More Details on Nomics API

Our API allows you to create . . .

Mobile Apps	Charting	Trading Bots
Strategy Backtests	Portfolio Valuation Tools	Pricing Websites

Our Free Cryptocurrency (And Bitcoin) Market Data API Provides . . .

- All trades and orders on 13 cryptocurrency exchanges (including historical trade data) behind one API

- Historical aggregate cryptocurrency market cap since January of 2013

- Candle/OHLC data for currencies & exchanges

- Near real-time latency

- No API rate limits

- Gapless raw trade data

- Price, crypto market cap, supply, and all-time high data

- World class API documentation and code samples in Python, Javascript, and Ruby

- Uptime and response time guarantees through Service level agreements (SLAs)

- Rapid customer support turnaround times

- Sparkline, exchange rate, ATH, & supply endpoints

Approach

We will first train a set of different deep learning models(Artificial Neural Networks, Reinforcement Learning, etc) on a specific set of data. Which every will perform the best will be carried forward. Then we will integrate the model with a DEXe so that the trained model can interact with the real world. We will also have 2 different types of front ends based on web and mobile app.

Breakdowns
1. In Iteration 1, we will start with data extraction and model training
2. In Iteration 2, we will enhance the model and start with web interface
3. In Iteration 3, we will create mobile app and integrate all of the systems.

Conclusion
In short, this task requires ongoing research along with development. The approach for model varies by considering age of data being extracted. Easiest one being the static 1 year old data and near real time prediction being the most difficult. Another technical challenge is the instability of the cryptocurrency prices.