

PULSE ANALYTICS

market analysis
WITH PYTHON

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Data Scientist



Litquidity, a popular FinMeme Instagram page, has been gaining traction and expanding its industry presence with services like ExecSum & Lit Ventures. With the recent rise in retail trading and sentiment driven ETFs, they hired us to create Pulse Analytics - a financial dashboard their users can access to analyze markets and gain some alternative data driven insights.



FUNDAMENTAL analysis

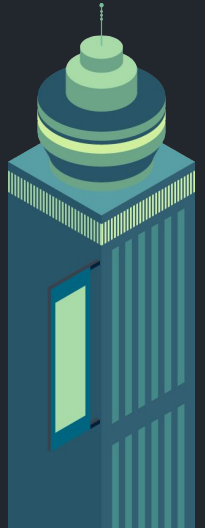
- Is a company overvalued / undervalued?
- Macro to Micro / Micro to Macro
- Earnings / DCF / Price Ratios
- Quantitative / Qualitative
- Long-term focus

TECHNICAL analysis

- Study of price action & volume
- Pattern & trend recognition
- Momentum / Sentiment
- Commodities / Forex Markets
- Short-term / HFT

EFFICIENT market HYPOTHESIS

- Market price reflects all available data
- No such thing as overvalued / undervalued
- Passive Investing / Low Cost Funds
- Strong / Semi / Weak



AGENDA

1

data / api providers

Quiver Quant / Alpha Vantage
Stock News API / NASDAQ Retail Tracker

2

ANALYSIS / VISUALS / MODEL

Feature Engineering / Charts
Price Predictor Classification

3

DASHBOARD DEPLOYMENT

Interactive Streamlit Application

4

FUTURE CONSIDERATIONS

Where We Are
Where We Want to Go

DATA PROVIDERS

QUIVER QUANT

Alternative Data Provider
Reddit / Twitter / Wikipedia
Congress / OTC / Institutional

ALPHA VANTAGE

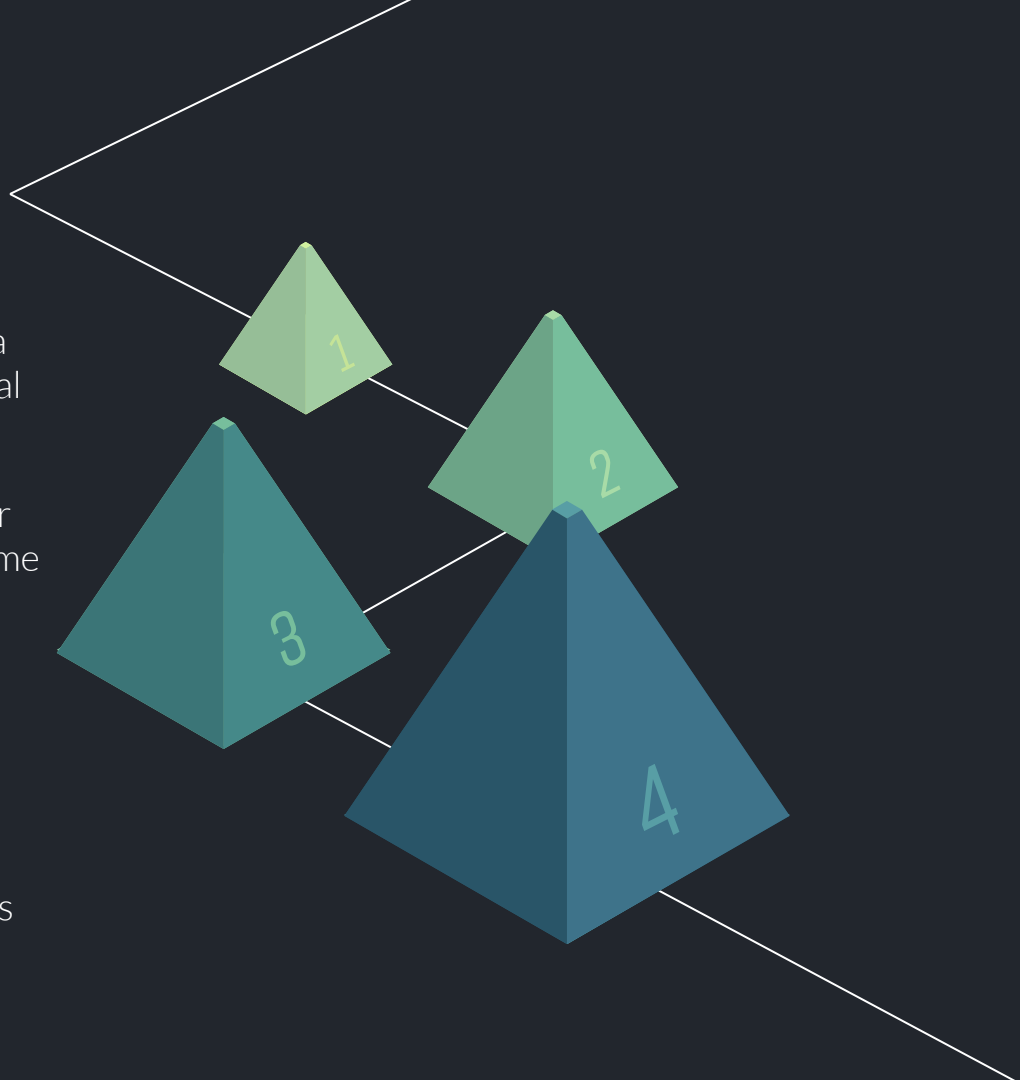
Market Prices Data Provider
Historical Daily Prices & Volume

NASDAQ RETAIL TRACKER

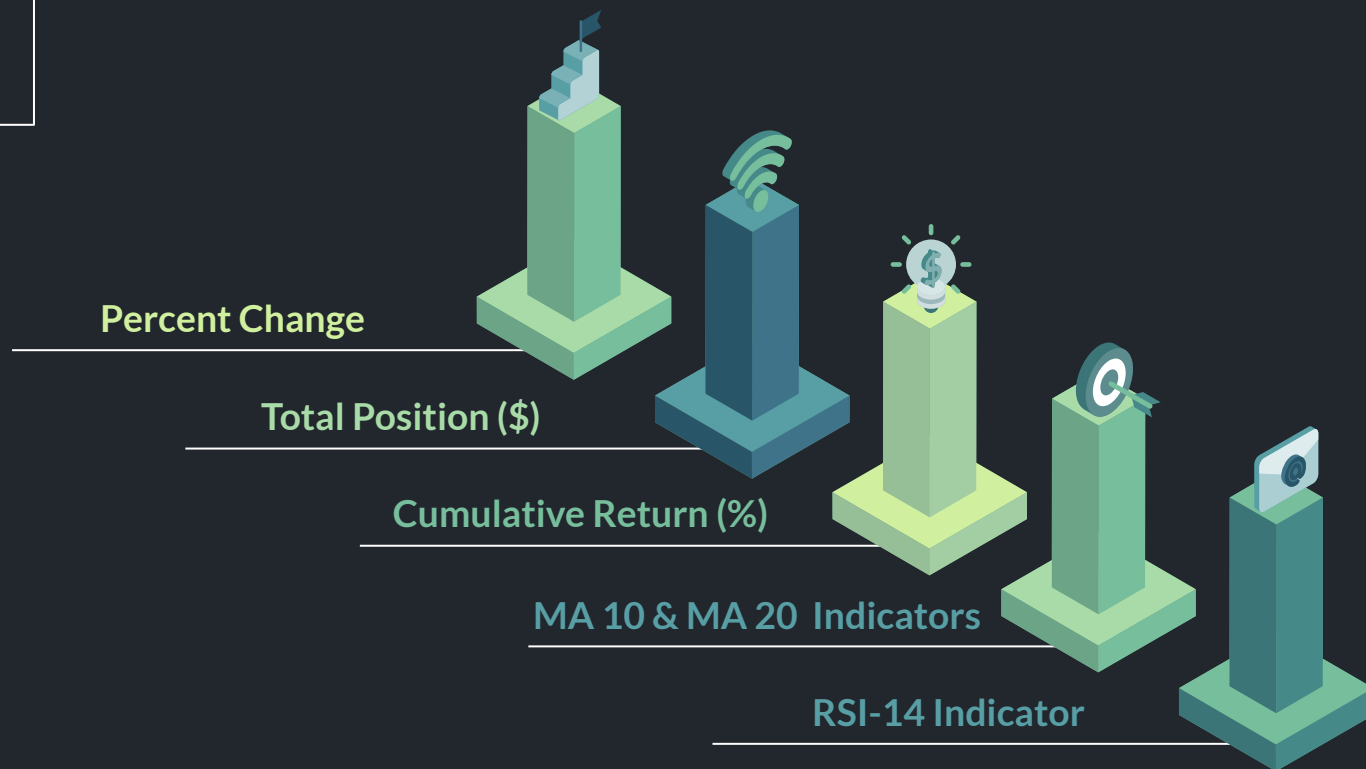
Net Buying/Selling
Market Sentiment

STOCK NEWS API

Financial News API
Access to multiple RSS Feeds



FEATURE ENGINEERING



FEATURES USED

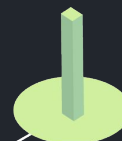
PRICE / VOLUME

Open / High / Low / Close
Adjusted Close
Total Volume



SENTIMENT

Rank / Mentions
WSB Sentiment
DPI
Nasdaq Retail Activity Tracker



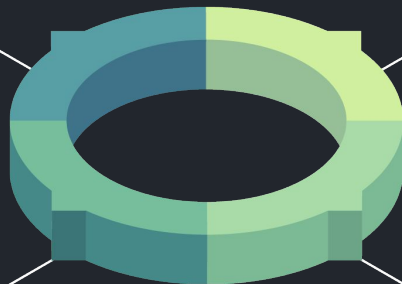
MOMENTUM

Relative Strength Index
(RSI-14)



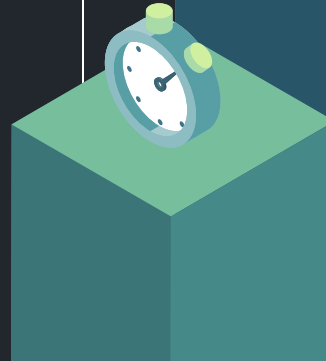
MOVING AVERAGES

MA -10
MA -20



MODEL CONSTRUCTION

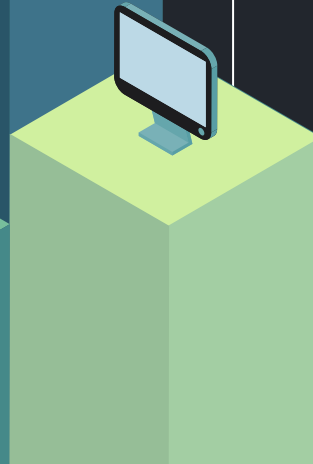
Logistic Regression
Binary Classification



Feature Engineering
Technical Indicators
Sentiment Indicators



Testing Target Time Frames
Feature Input Analysis



MODEL EVALUATION

1 DAY - PRICE / VOLUME

OHLC / Adjusted Close / Volume

TRAINING : 53.42%

TESTING : 58.10%

1 DAY - ALL FEATURES

OHLC / Volume / RSI / MA / DPI / Sentiment
Activity Tracker / Mentions / Rank

TRAINING : 58.20%

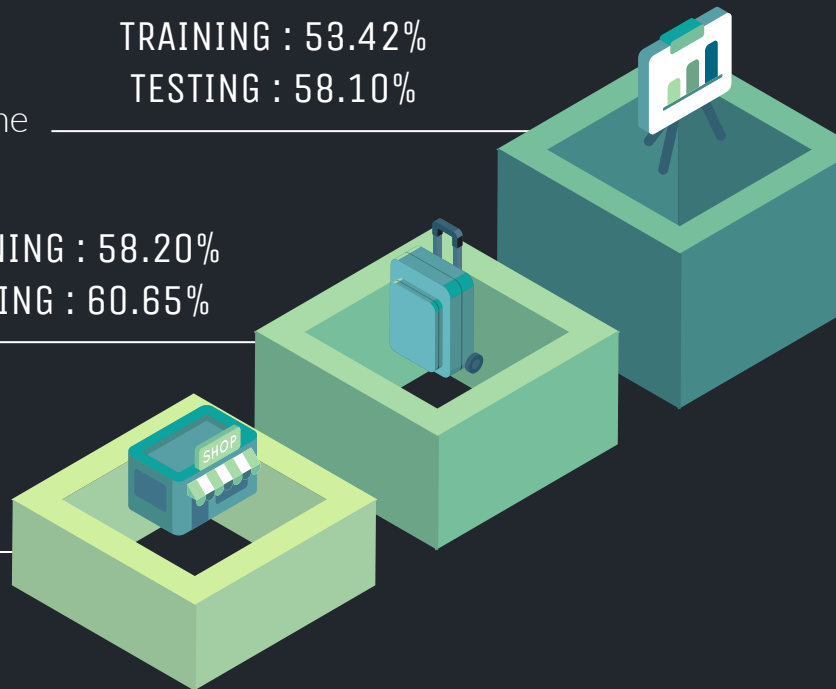
TESTING : 60.65%

1 WEEK - ALL FEATURES

OHLC / Volume / RSI / MA / DPI / Sentiment
Activity Tracker / Mentions / Rank

TRAINING : 57.33%

TESTING : 54.68%



FB CHART ANALYSIS

- Line / OLHC
- Custom Date Range
- MA 10/20
- Indicators
- Volume Indicator
- RSI-14 Indicator



DASHBOARD DEPLOYMENT GITHUB



WHERE WE ARE

- Pulse Analytics dashboard framework
- Technical price movement predictor building blocks
- Alternative data analysis
- News Sentiment scores across the market and ticker specific.



WHERE WE WANT TO BE

- Forex / Fixed Income / Crypto
- Live Pricing Feature / Exec Sum
- Portfolio Construction Tool
- Proprietary Sentiment Indicators
- Community Chat / Social Platform



THANK YOU!

Does anyone have any questions?

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