Ouiken Dueet

EquiVision

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Agenda

- Problem statement deep dive
- Intro to our product
- Demo
- Future expansions

Problem Statement Analysis

- **Our Choice**: Real Time Risk Management

- **Core Message:** Financial institutions are increasingly seeking AI-driven tools capable of converting both quantitative and qualitative datasets into actionable, narrative insights for adept risk management.

- **Defining Risk:**
  a. Types include Counterparty, Credit, Equity, and Interest Rate.
  b. Each variety of risk demands its distinct analytical method.
  c. Risk dynamics shift across regions and differ between private and public sectors.

Our Approach

- **Market Choice:** Public Markets

  Data availability via openly available APIs.

- **Type of Risk:** Equity Price Risk

  Directly quantitative and ideal for AI analysis. Readily available financial news articles for qualitative analysis.

- **Acknowledging current analytical efforts**

  Recognizing that current market research teams are still relevant and playing a critical role

- **Our Product**

  Assists analyst teams in deriving clear market trends from both quantitative and qualitative financial data.

Application

- Due to time constraint and lack of volume of training data, we decided to use pre-trained models
    - We looked through many models to find the best possible model for the use case
    - However, we can definitely train a model that fits more specifically with data that Citi uses internally, to improve results
- We also managed to source for open financial data from Yahoo Finance
- However, it is possible that the application be fed different datasets, such as perhaps Citi's internal market datasets, and the model will analyse it the same way.

Time-series analysis

- Naturally, we look to do quantitative analysis on the quantitative data that we gain from YFinance

- In the context of Citi, we believe that Risk may be calculated in more meaningful context such as Tracking Risk, possibly against famous composite stocks such as SnP500, Vanguard etc

- However, at the moment, we decide to do a simpler analysis - time series analysis

Yahoo Finance

- We obtain opening and closing prices and news article from Yahoo Finance related to the stock

- In our app, Our Machine Learning model runs the time-series analysis to extrapolate the future prices and show the price range of the prediction within the the standard deviation

- Afterwards, we run calculations of the risk and produce a number, and also return qualitative description of what the graph is predicting

Yahoo Finance

- We then extract the most recent headlines from Yahoo Finance regarding the stock that we inputted
  - It is possible to use internal Citi research insights here

- We then use AI to read the headlines and produce the sentiment analysis based on the headlines to give an aggregate on the sentiment on the stock - whether its positive neutral or negative.

Future expansions

Price Analysis

Current:

Analyze live financial data from Yahoo finance and predict the trajectory using a machine learning model.

Make general recommendations about whether one should buy more stock, hold the stock, or sell the stock across the forecasted period.

Future improvements:

More detailed narrative analysis of the trajectory.

Greater range of projections beyond 4 years.

Finer projections (in days, months, weeks)

Sentiment Analysis

Current:

We analyze numerous headline titles related to the equity we are interested in, and generate a sentiment analysis of whether it is positive, neutral, or negative.

Future improvements:

Obtain more text data from a greater variety of news sources beyond Yahoo news (eg. Straits Times, Guardian, etc.)

Analyze the full length of the article rather than just the headline itself.