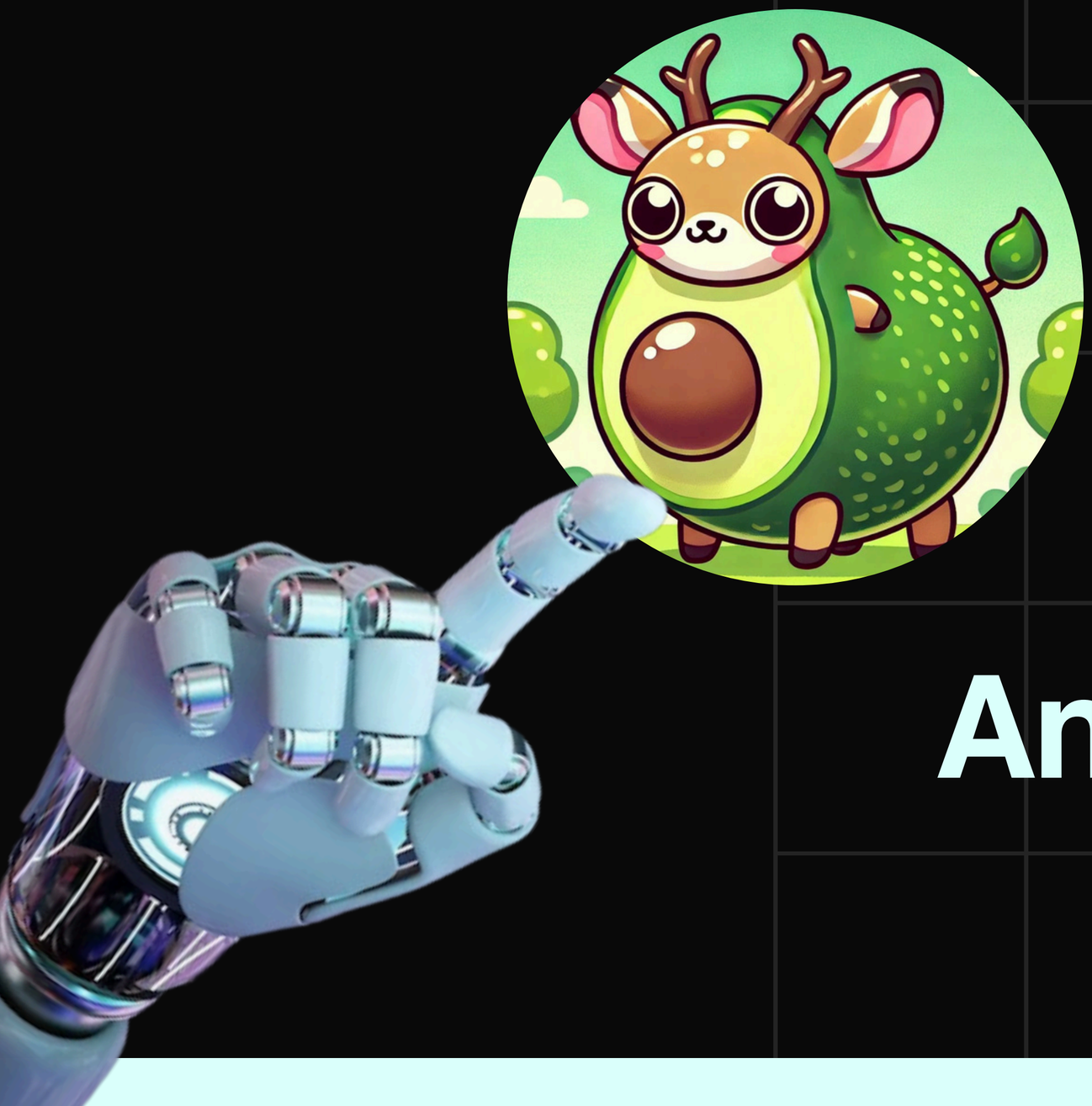
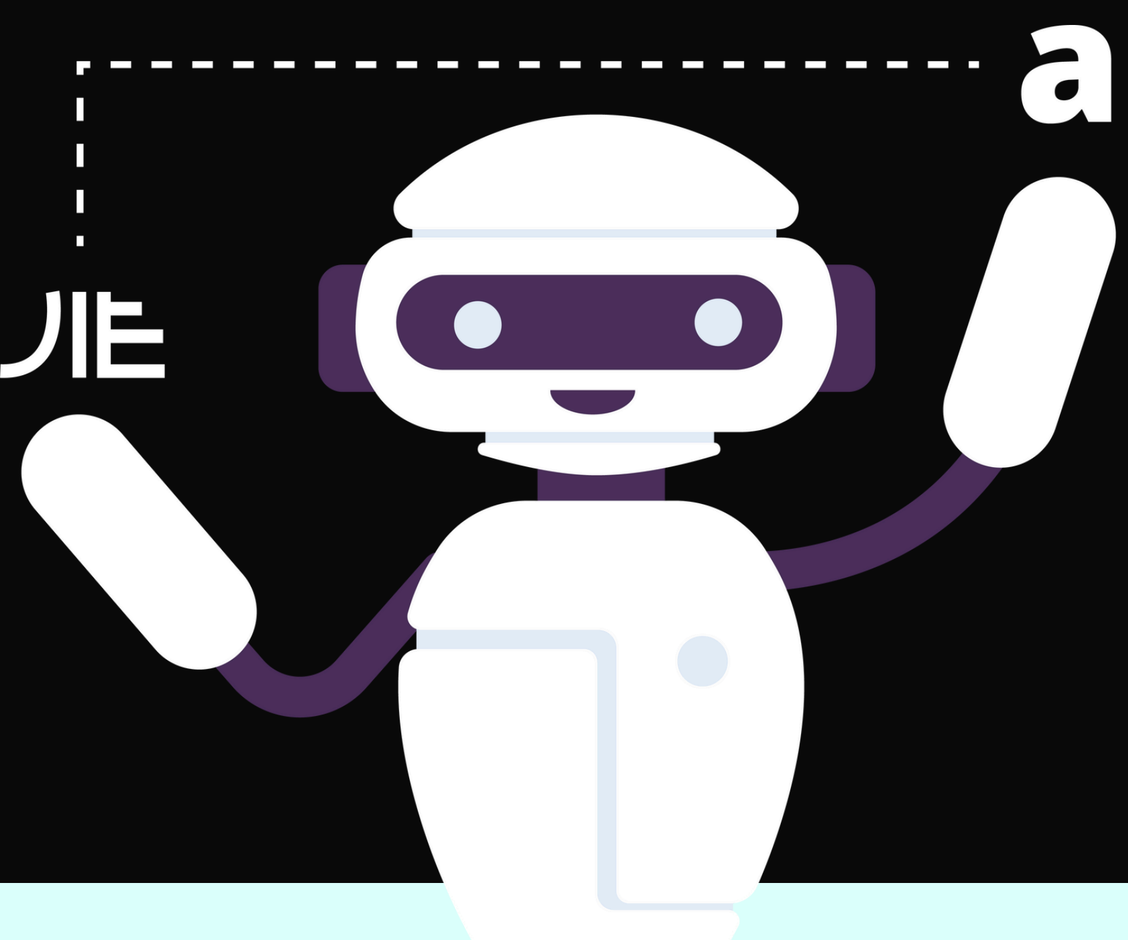


Pipelining Financial Statement Analysis using AI

Presented by AvocadoImpala (AI)

PDF Extraction



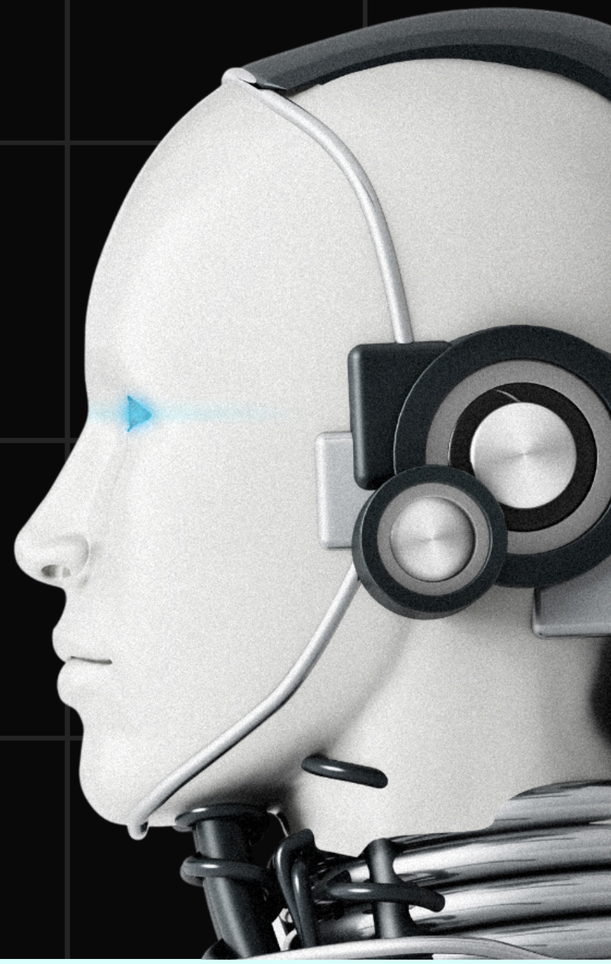
- Text extraction
- Prompt Engineering
- Compare models
- Compile results

Leverage RAG (Retrieval Augmented Generation) technology to generate the business segment of the company.

Tools used:

- Pinecone (database)
- GPT 4o from Azure
- text-embedding-ada-002 from Azure

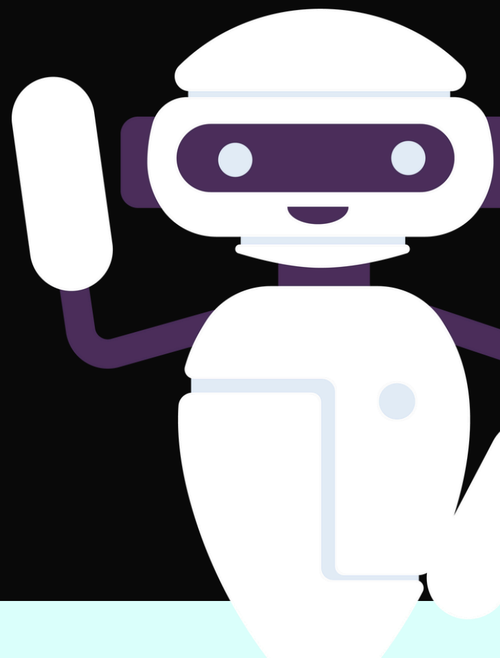
At this stage, we are focused on the Maxis annual financial report.



Financial Ratio Analysis

Compute ratio such as common financial ratio

- **Profitability ratio**
  - Metrics and ratio that measure how well the company is generating profit
- **Liquidity ratio**
  - Metrics that measure the company ability to pay its short-term debt
- **Efficiency ratio**
  - Metrics that assess how effectively the company is utilizing its assts
- **Solvency ratio**
  - Metrics that evaluate the company long-term financial stability
  - Is their business able to be remain profitable in the future based on how their current cost of operation
- **Investment valuation ratios**
  - Metrics used to assess the relative attractiveness of an investment in a company's stock
  - Help investors determine whether a company's stock is overvalued, undervalued, or fairly priced



Financial Ratio Analysis

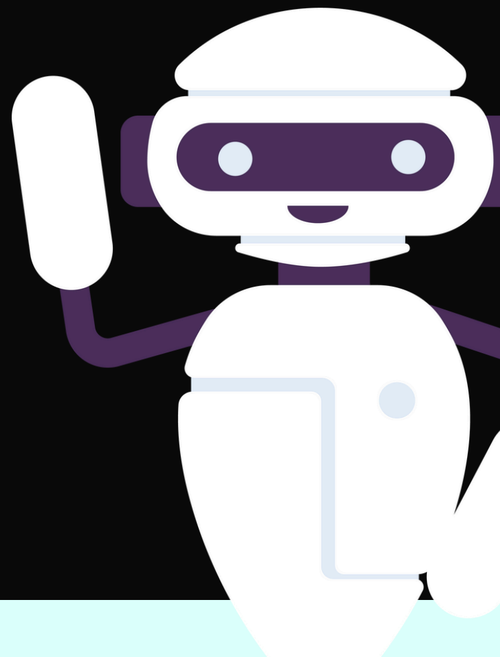
CAPM related metrics

- Metrics used to determine assets performance in relative market risk

Credit risk statistical score

- Test such as Altman Z score which measure take in account profitability, leverage, liquidity, solvency, and activity ratios.

The purpose of the ratios is to close the knowledge gap between those technical and non-technical allowing for easy interpretation

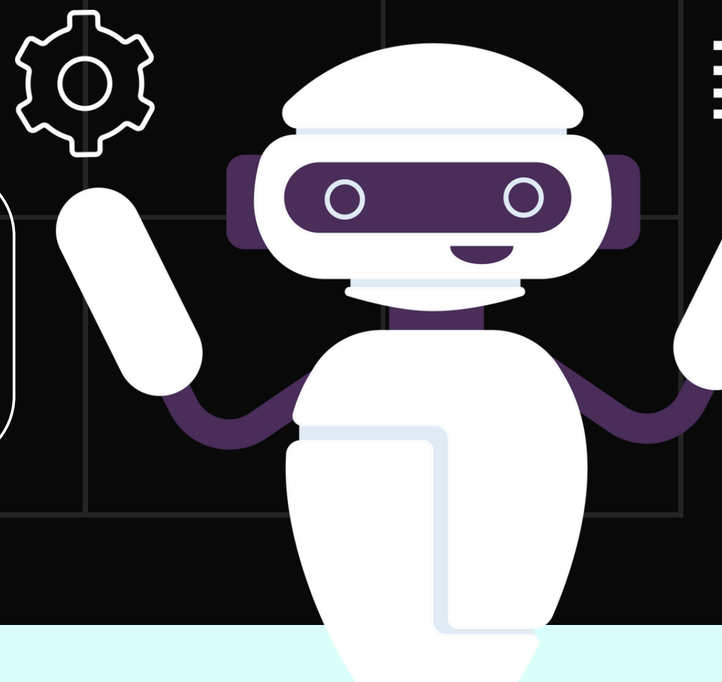


Revenue, total liabilities and projection

Treat Revenue, Total Liabilities and Profit as an time series, use ARIMA and SARIMAX model to fit and forecast.

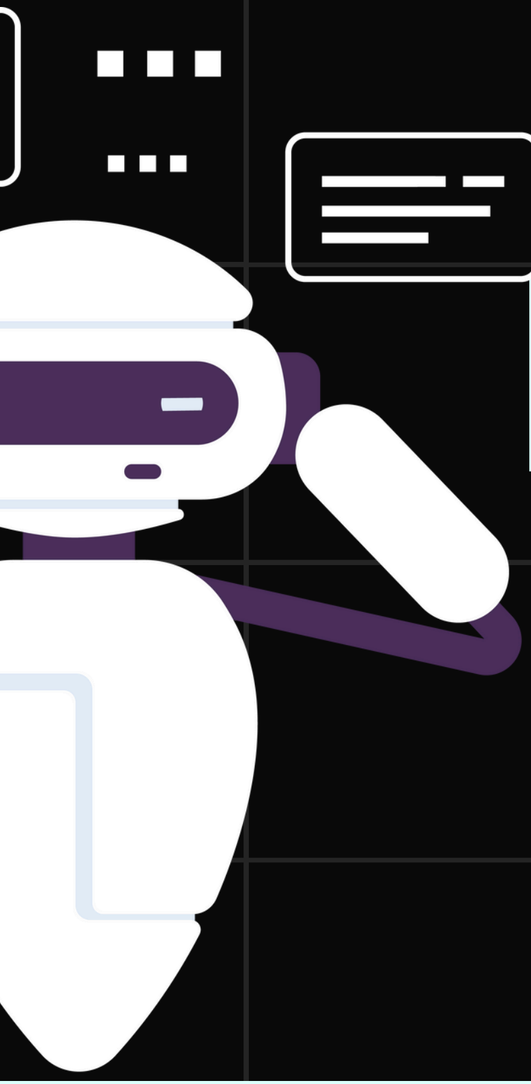
Regime switching models

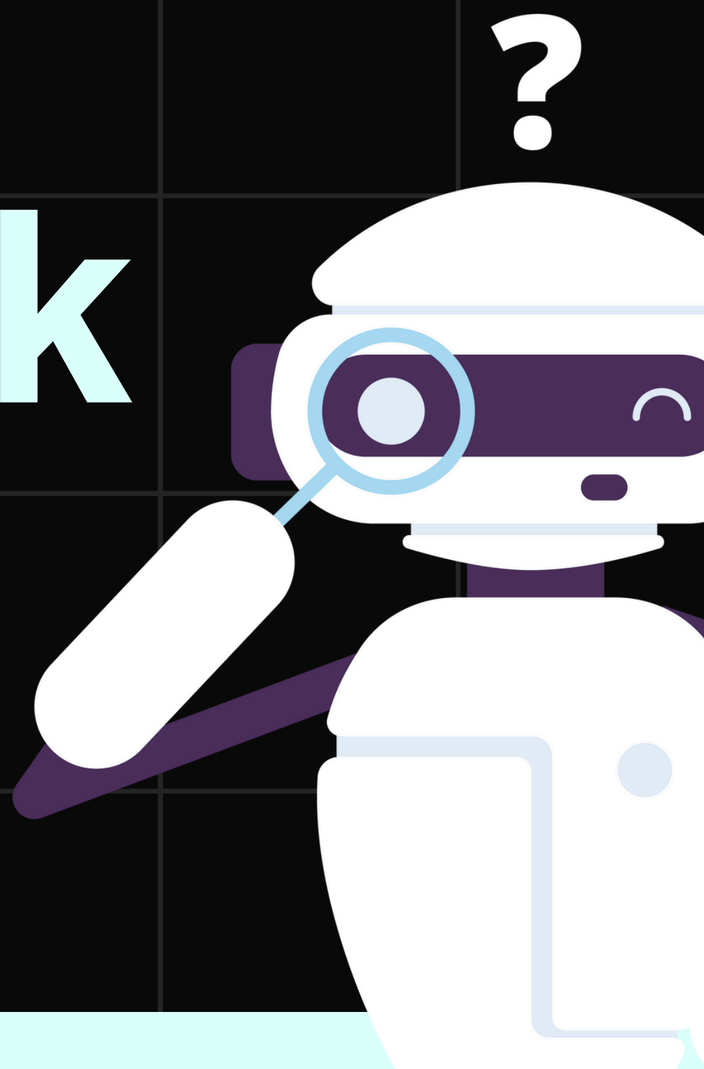
Switches between market state such as bull and bear, or climate change to avoid catastrophic losses



Future Work

for Improvement





Abnormal Value Detection

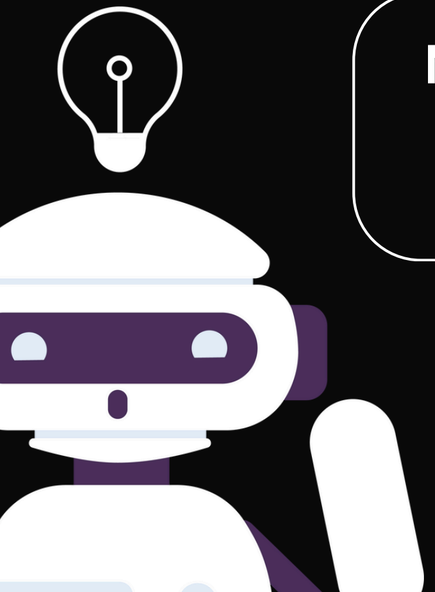
- Looking at outlier of all past revenue, liabilities and earning percentage change and determine their outlier
- Possible if there are additional features we can perform classification algorithm and machine learning method to increase precision and recall metrics

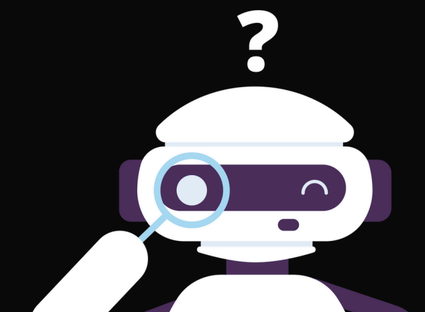
Training an LLM to detect specific sections in the annual report

- Understanding where the business segment is and ignore the rest
- Summarise this part and understand what the business about

More robust regime switching models

- Implement feature and additional layers of different frameworks, different method of computing switching probabilities



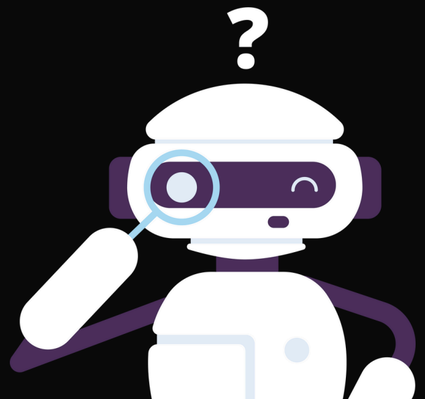


Scenario testing

- Scenario testing using a large language model (LLM) for a company involves creating hypothetical situations to evaluate how the model responds to various inputs, ensuring it can generate relevant and accurate information aligned with the company's context and objectives

Hierarchical Structuring for financial performance

- Decision matrix
- Since different industries would prioritize different ratios, so assigning it based on a hierarchical ranking to each of these different ratios



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Thankyou

AvocadoImpala