RiskGenius

A GenAI-enabled productivity tool to assist portfolio managers in risk management

Problem: Portfolio managers are limited in their ability to comprehensively understand emerging risks with the existing tools available

citi 's Risk Assessment Model

Stakeholders	Risk Analytics and Modeling	Portfolio Risk Analyst	Securities & Derivatives Analyst

Risk Assessment Flow

Identification		Analysis	Response	Monitoring
Limited data sources	Complex and dynamic nature of risks	Data-centric approach	Lack of NLP capabilities	Human expertise gap

Lack of resources to efficiently produce narrative context to comprehensively understand emerging risks

Opportunity for GenAI

Use of GenAI in the financial/banking sector: Many banks and financial companies are already using or in the process of developing GenAI tools, making the use of GenAI the norm not the exception.

Capital One

JPMorgan Chase & Co.

Uses GenAI to augment AI powered fraud and suspicious activity detection system

Morgan Stanley

Uses GenAI to leverage its own vast data sources to assist financial advisors with insights into companies, sectors, asset classes, capital markets, and regions around the world

WELLS FARGO

Automating document processing, including providing summary reports, and scaling up its virtual assistant chatbots

Goldman Sachs

CITADEL

GenAI applications for internal software development and information analysis

Problem statement: How to improve productivity of portfolio manager through the use of GenAI?

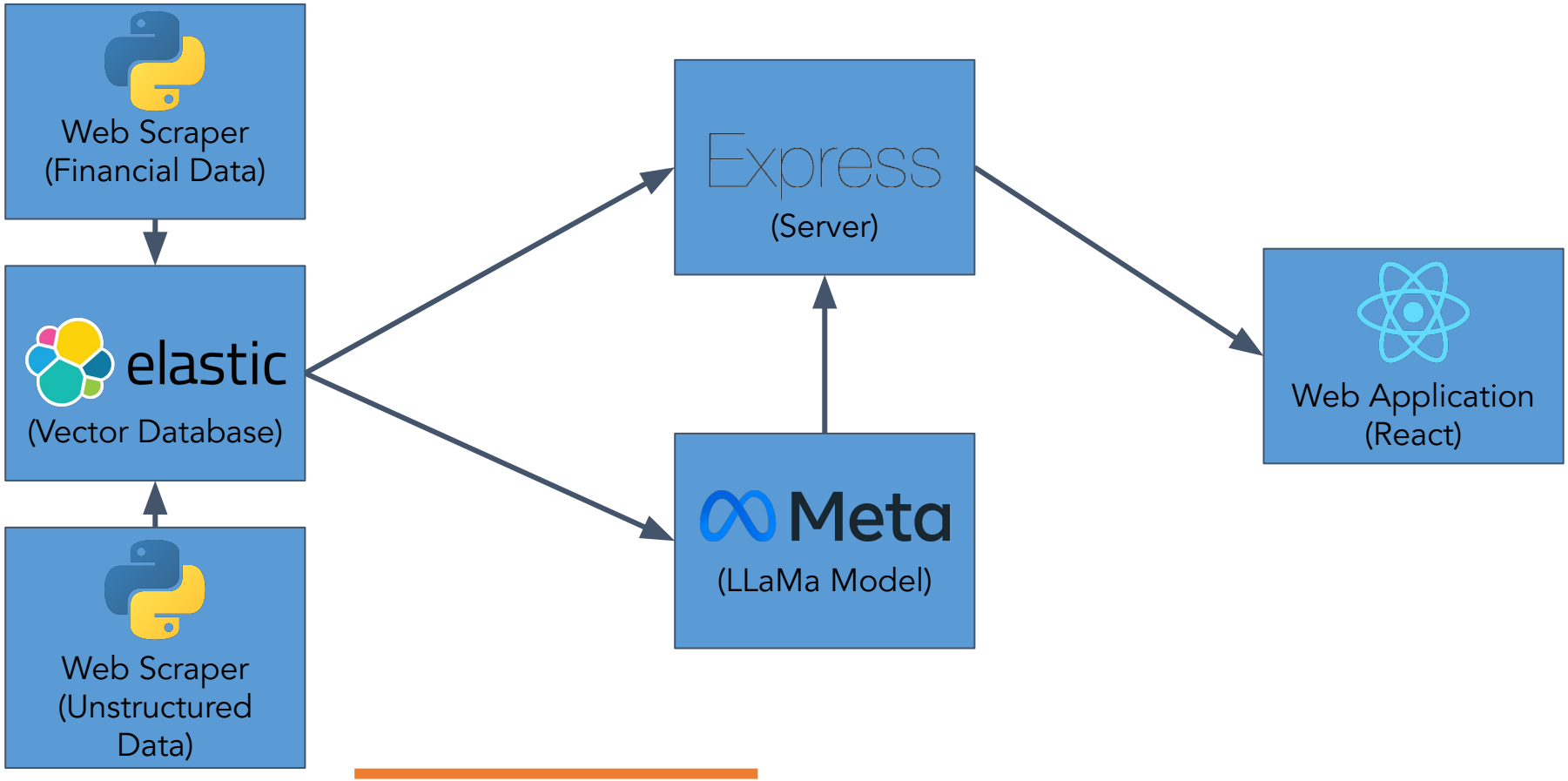
Considerations

Effectiveness of solution	Implementation
Need to create a solution that is effective in improving the Quality of Life of a portfolio manager. Solution will have to either simplify or automate certain workflow process.	The goal of the solution is not to replace portfolio managers, but instead to complement them. Hence, the solution has to function akin to a productivity tool.

Create a solution that can improve the productivity of portfolio managers by simplifying or automating certain workflow process in risk management.

GenAI based solution

Solution: Training a GenAI to understand contextual data, and then using that to create a productivity tool to generate risk reports for portfolio managers



Live demo of solution

Extension: Solution can be further refined to improve the effectiveness of the solution

Proof of Concept model

Supports stocks and options	Only trained on news articles

Market data is scrapped from finviz.com, News articles are scrapped from Yahoo Finance. No analytics done on market data.

Future development model

Also support other instruments such as commodities and fixed incomes and securities	Also trained on financial reports, social media posts and other unstructured data

Will support banks internal database for market data, possible connections to stock exchanges for faster real time updates. Will support banks internal analytical tools as well.

Impact:

Results			
Contextual Data Understanding	Narrative Insights	Time efficiency	Continuous learning and improvement
Analyse data beyond simple metrics, taking into account market dynamics, economic events, news, etc.	Offers context and explanations for risk assessments.	Access up-to-date risk assessments, allowing focus on higher-value tasks	Continuous learn from new data, improving understanding of market dynamics and refining risk assessments

Impacts			
Enhanced Decision-Making	Actionable insights	Time saving	Consistency and Accuracy

Allowing proactive risk management

Limitations: LLMs are not a perfect solution

Limitations			
Lack Of Real Understanding	Limited Explanation	Not a Substitute for Human Expertise	Limited Contextual Understanding:
No genuine comprehension. Merely generates text based on patterns learnt	Responses are provided without explanations. In the financial world where real stakes are involved, interpretability is crucial	Mainly serves to complement professionals especially in domains that require critical thinking and nuanced decision-making	LLMs have limited context window (4096 words). Long documents might not be fully understood, and context from the beginning of a conversation can be lost.

Judging Criteria

Criteria	Points	Considerations
Impact & Relevance	10	• Does the proposed solution address the problems for the targeted user group and achieve its intended outcomes? Does it address the identified problems completely and is fully relevant to the selected problem statement? • Is the proposed solution feasible and contains potential for future enhancements? • Does the solution have business viability, and can the ideas be brought to market after development?
Technical Design & Implementation	10	• How technically challenging were the requirements that the team set out to address? • Was the architecture of the proposed solution well-designed? • How well was the team able to demonstrate an actual working solution with implemented features? (Note: code submission is mandatory)
Innovativeness	10	• Is the idea clear and feasible? • How unique and creative is the proposed solution? • Does the solution offer a new and inventive approach to solving the problem?
User Experience	10	• How intuitive and user-friendly is the proposed solution? Can users easily navigate and interact with it? • Is the UI design easy to understand and easy to use? • Is the UI design consistent throughout the application's various interfaces? • Is the team able to demonstrate a well-designed user interface catered to various groups of users?
Presentation	10	• Was the team's presentation clear, concise, engaging and coherent? • Did the team effectively communicate the key features of their proposed solution? • Did the team clearly illustrate how the solution will benefit the various stakeholders involved? • Was the product demonstration presented smoothly and successfully? • Was the team able to conduct Q&A with confidence, addressing judges' concerns to the point?