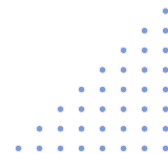# GENERATIVE AI PROBLEM STATEMENTS

PROBLEM STATEMENT #1:
Research & Document Summarization

Develop an advanced generative AI solution for research & document summarization that leverages natural language processing (NLP) and deep learning techniques to automatically generate concise and coherent summaries of lengthy documents, such as research papers, articles, reports, or other textual content. The solution should be able to extract key information, capture the main ideas, and summarize the content in a way that is meaningful and informative to users, while maintaining the original context and meaning.

The solution should enable users to:

• Efficiently and accurately summarize large volumes of documents, saving time and effort in manual summarization tasks, and enabling users to quickly identify relevant information.

• Generate summaries that are coherent, readable, and relevant, with accurate representation of the main ideas, important details, and key findings of the original documents.

• Customize summarization based on specific user requirements, such as summarizing documents on a particular topic, from a specific domain, or with certain length or style preferences.

• Handle different types of documents, including scientific papers, technical reports, legal documents, business articles, and other forms of written content, with varying complexity, domain-specific language, and structure.

• Provide insights and analysis on the summarized content, such as identifying trends, patterns, and relationships among different documents or extracting key terms, entities, and concepts.

• Ensure data security and privacy by handling sensitive information in accordance with relevant laws and regulations and implementing robust security measures to protect the confidentiality and integrity of the documents and summaries.

• Include a query functionality

The solution should be scalable, adaptable, and user-friendly, with a well-designed interface that allows users to input documents, configure summarization parameters, and interact with the generated summaries. The solution should also be continuously improved and updated based on user feedback and emerging NLP and deep learning advancements to ensure state-of-the-art performance in research & document summarization tasks.

Consideration:
How could bias affect this solution? Be prepared to address an alignment process which can be benchmarked and checked.

PROBLEM STATEMENT #2:
Augmented Advisory for Customers in the Financial Services Industry

Inclusive Data 2023

A digitalpage.org Hackathon

Sponsored by
Capgemini
FINANCIAL SERVICES · INSIGHTS & DATA

In the financial services industry, customers often face complex decisions related to investments, financial planning, risk management, insurance, and other financial matters. Collaborative decision-making among customers can be facilitated using generative AI techniques to help them gather insights, compare options, and make informed financial decisions.

Develop a generative AI solution that enables collaborative decision-making among customers in the financial services industry.

Deliverables:

·   A generative AI model or system that can take input from customers in the financial services industry and generate personalized financial recommendations, summaries, or visualizations to facilitate collaborative decision-making.

·   A user-friendly interface, such as a web or mobile application, that allows customers to input their financial preferences and interact with the generative AI system.

·   Documentation and instructions on how customers in the financial services industry can use and benefit from the generative AI solution, including any relevant code or software components.

·   Presentation or demonstration of the generative AI solution to showcase its functionality and effectiveness in facilitating collaborative decision-making among customers in the financial services industry.

The solution should leverage generative AI techniques, such as recommendation systems, natural language processing (NLP), machine learning, and other relevant technologies, to help customers share their financial goals, risk tolerance, investment preferences, and other relevant information in a collaborative manner. The solution should provide a user-friendly interface that allows customers to input their perspectives, and generate personalized financial recommendations, summaries, or visualizations to facilitate efficient decision-making.

Consideration:
How could bias affect this solution? Be prepared to address an alignment process which can be benchmarked and checked.

PROBLEM STATEMENT #3:
Enhancing Customer Engagement and Retention in Financial Services with Generative AI

Inclusive Data 2023
A digitalpage.org Hackathon
Sponsored by
Capgemini
FINANCIAL SERVICES · INSIGHTS & DATA

As a CMO in the financial services industry, your goal is to create effective marketing strategies to engage and retain customers in a highly competitive market. Customer engagement and retention are critical for long-term business success, and it requires creating compelling marketing campaigns that resonate with customers' needs, preferences, and financial goals.

In this problem statement, your challenge is to leverage Generative AI techniques to enhance customer engagement and retention in the financial services industry. You need to develop a solution that can generate personalized and relevant marketing content that resonates with customers, and motivates them to act, such as making purchases, using services, or recommending the company to others. The solution should use Generative AI techniques, such as language models, natural language processing (NLP), and deep learning algorithms, to generate marketing content that is tailored to individual customers, their financial needs, and preferences.

Deliverables:

· Personalized content based on customer personas – change the call to actions based on preferences

· Generative AI-powered marketing content generation solution that can automatically generate personalized marketing content, such as emails, advertisements, social media posts, and other marketing materials, based on customer profiles, behaviors, preferences, and financial goals.

· User-friendly interface or API that allows marketing teams to input customer profiles and preferences, customize content generation settings, and review and edit generated content as needed.

· Evaluation metrics and performance benchmarks to measure the effectiveness and impact of the generated marketing content, such as customer engagement rates, conversion rates, customer retention rates, and customer feedback.

· Documentation and guidelines for using the Generative AI-powered marketing content generation solution, including best practices, usage instructions, and compliance considerations, such as data privacy and regulatory compliance.

· Presentation or demo showcasing the capabilities and benefits of the Generative AI-powered marketing content generation solution to stakeholders, such as marketing executives, customer relationship teams, and regulatory compliance teams.

Consideration: How could bias affect this solution? Be prepared to address an alignment process which can be benchmarked and checked.

PROBLEM STATEMENT #4:
Enhancing Financial Report Search and Narrative Generation with Generative AI

In the financial services industry, there is a significant amount of data generated in the form of financial reports, research papers, market analysis, and other relevant documents. These reports are often lengthy, complex, and time-consuming to search through, analyze, and summarize. Financial professionals, such as analysts, portfolio managers, and investment advisors, require efficient and effective tools to search, extract relevant information, and generate concise narratives for decision-making, client communication, and reporting purposes.

The problem is that traditional methods of searching and summarizing financial reports are manual, time-consuming, and prone to human biases. There is a need for an innovative solution that leverages Generative AI techniques to automate the process of report search and narrative generation in the financial services industry, enabling financial professionals to extract relevant information, generate concise summaries, and gain actionable insights from large volumes of financial reports quickly and accurately.

Deliverables:

·Report Search Engine: Develop a Generative AI-powered report search engine that can automatically search and extract relevant information from financial reports, research papers, market analysis, and other relevant documents. The search engine should be able to understand and interpret the context, identify key concepts, and generate relevant search results based on user queries.

·Narrative Generation: Develop a Generative AI-powered narrative generation module that can automatically generate concise and coherent narratives summarizing the key findings, insights, and recommendations from the financial reports. The narrative generation module should be able to understand the context, extract relevant information, and generate summaries in a coherent and meaningful manner.

·User Interface: Design an intuitive and user-friendly interface that enables financial professionals to interact with the Generative AI-powered report search engine and narrative generation module. The interface should allow users to input queries, view search results, and access generated summaries in a user-friendly format for easy interpretation and utilization in decision-making, client communication, and reporting.

·Evaluation Metrics: Define appropriate evaluation metrics to assess the accuracy, relevance, coherence, and conciseness of the generated narratives. Develop a comprehensive evaluation framework to validate the performance of the Generative AI-powered report search and narrative generation solution.

Considerations: Solutions related to this problem statement have the potential to significantly enhance the efficiency and effectiveness of financial report search and narrative generation in the financial services industry. It can enable financial professionals to gain actionable insights and improve decision-making, client communication, and reporting processes quickly and accurately. The solution can also reduce manual effort, mitigate biases, and improve the overall productivity and performance of financial professionals in their day-to-day activities.

Consideration: How could bias affect this solution? Be prepared to address an alignment process which can be benchmarked and checked.

Small and Medium Enterprises (SMEs) face significant challenges in managing their finances and ensuring the security of online payment transactions. Fraudulent activities in online payment systems can result in significant financial losses for SMEs. Therefore, there is a need for a fraud detection and prevention system that is affordable and easy to use for SMEs.

Develop an affordable and easy-to-use fraud detection and prevention system for SMEs' online payment transactions that can analyze transaction data and identify potentially fraudulent activities.

The system should use machine learning algorithms to analyze transaction data, including user behavior, transaction history, and other relevant factors, to identify potentially fraudulent activities. The system should be affordable, easy to use, and require minimal technical expertise to set up and operate. The system should also provide real-time alerts to SMEs when suspicious transactions are detected.

Deliverables: The team is expected to deliver a functional prototype of the fraud detection and prevention system with a user-friendly interface for SMEs. The prototype should be tested and validated using real-world data from SMEs' online payment transactions.

Consideration:

Considerations:
- How could bias affect this solution? Be prepared to address an alignment process which can be benchmarked and checked.
- Accuracy and relevance of the system's fraud detection capabilities
- Affordability and ease of use of the system for SMEs
- Effectiveness and timeliness of the system's alerts to SMEs
- Scalability and robustness of the system