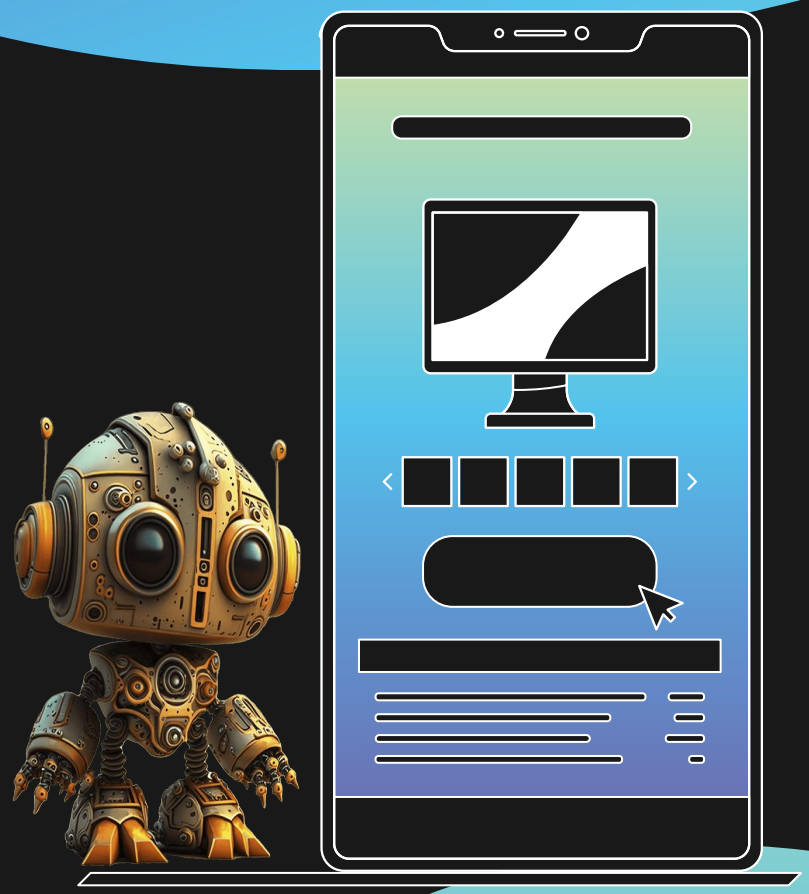
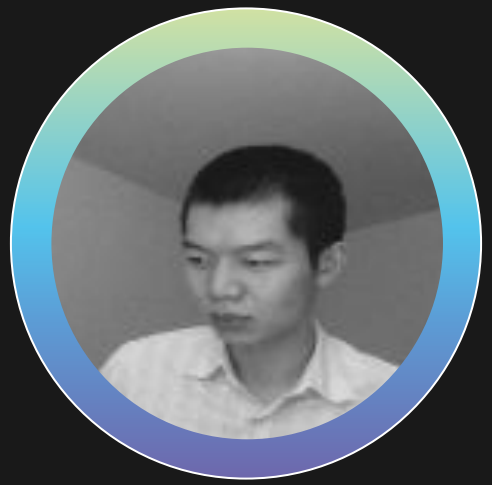


MONEY MENTOR

A Generative AI ChatBot for Customers in the Financial Services Industry

OUR TEAM



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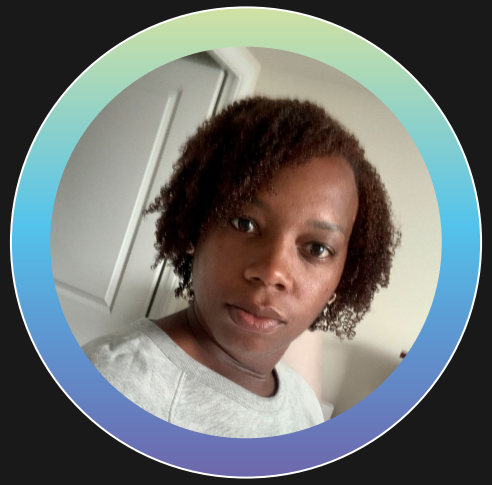

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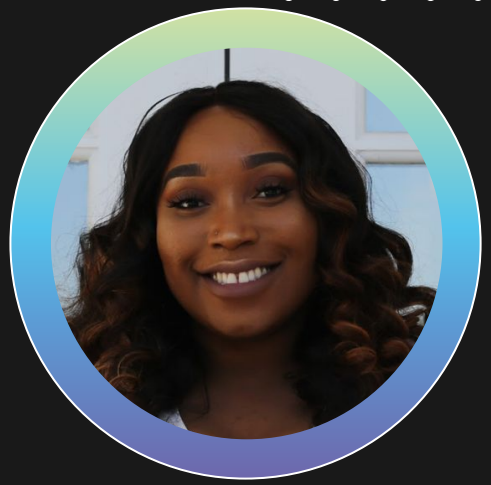

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Agenda

01 WHY GENERATIVE AI

02 METHODOLOGY

03 DEMO

04 LIMITATIONS & CONSIDERATIONS

05 SCALABILITY

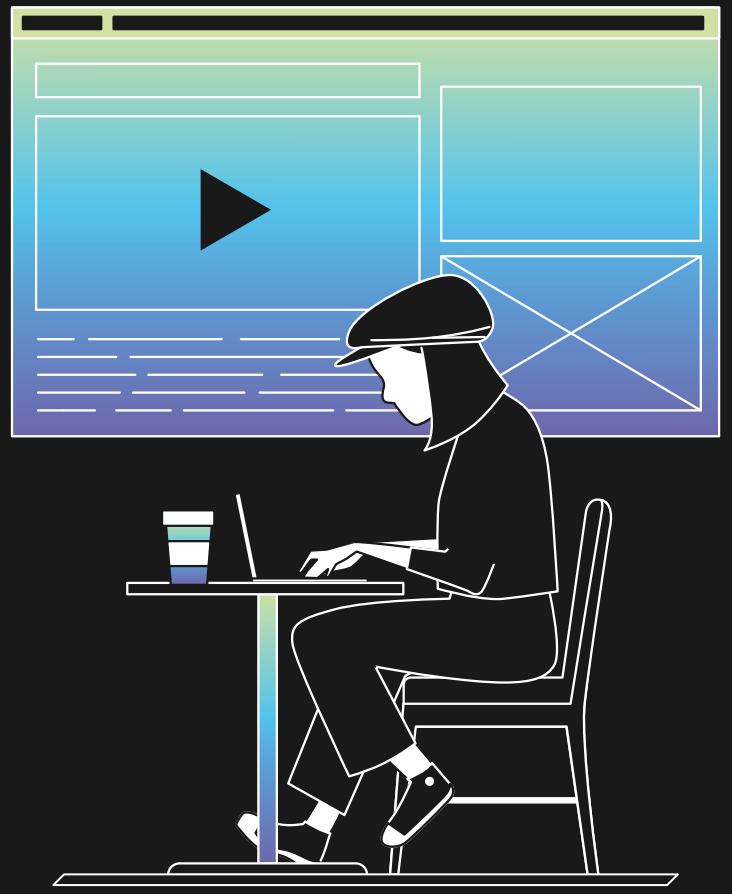
06 EVALUATION

07 BIAS & ALIGNMENT

08 FEEDBACK & QUESTIONS

01

WHY
GENERATIVE AI



Generative AI is a Disruptive Technology

- Generative AI in the form of Large Language Models (LLMs) is a disruptive technology ready to reshape all industries.

- According to a McKinsey study:

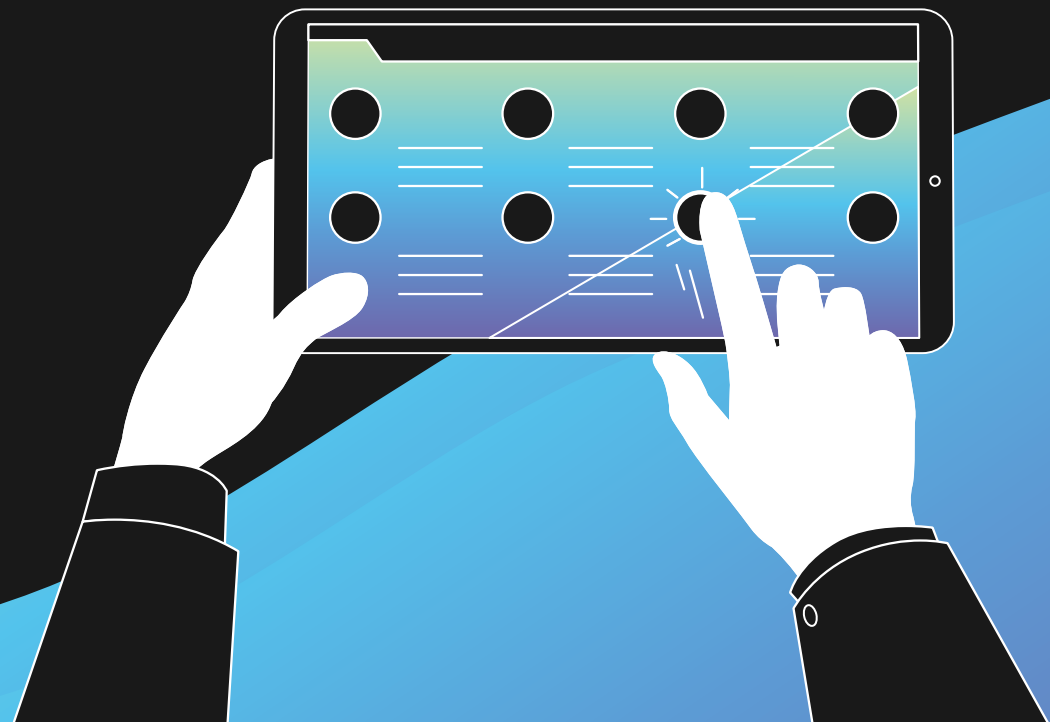
> ***Generative AI will have a significant impact across all industry sectors.*** Banking, high tech, and life sciences are among the industries that could see the biggest impact as a percentage of their revenues from generative AI. Across the banking industry, for example, the technology could deliver value equal to an additional $200 billion to $340 billion annually if the use cases were fully implemented. In retail and consumer packaged goods, the potential impact is also significant at $400 billion to $660 billion a year.

- **Objective:** With OpenAI opening ChatGPT APIs for public use, we are ready to leverage the power of prompt engineering to build a truly robust financial services tool that will "delight" customers.

02

METHODOLOGY

TOOLS & LIBRARIES



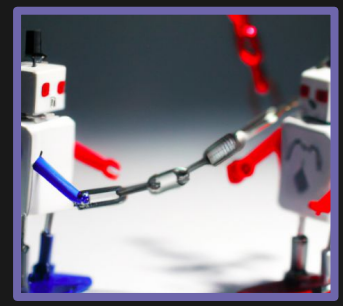
TOOLS & LIBRARIES

LangChain

- **OpenAI - Large Language Model (LLM)** accessed through *langchain.llms* module.
- **Api key** for accessing the LLM are stored in a separate file called *apikey.py*, which is imported through the *apikey* module.
- **STREAMLIT** Python library for building a user interface to input prompts and receive output from our LLM.
- **PROMPT ENGINEERING** involves structured user input to guide the language model and generate meaningful and contextually relevant responses via template-based prompts through *langchain.prompts.PromptTemplate* class.

Streamlit

TOOLS & LIBRARIES cont'd



LLM CHAINS used: 1) *LLMChain* and 2) *SequentialChain*.

CONVERSATION MEMORY: *ConversationBufferMemory* class from *langchain.memory* module to store and retrieve conversation history through two memory instances *topic_memory*, *advice_memory*, and *financial_institutions_memory*.

EXECUTION FLOW: The project follows a sequential execution flow.

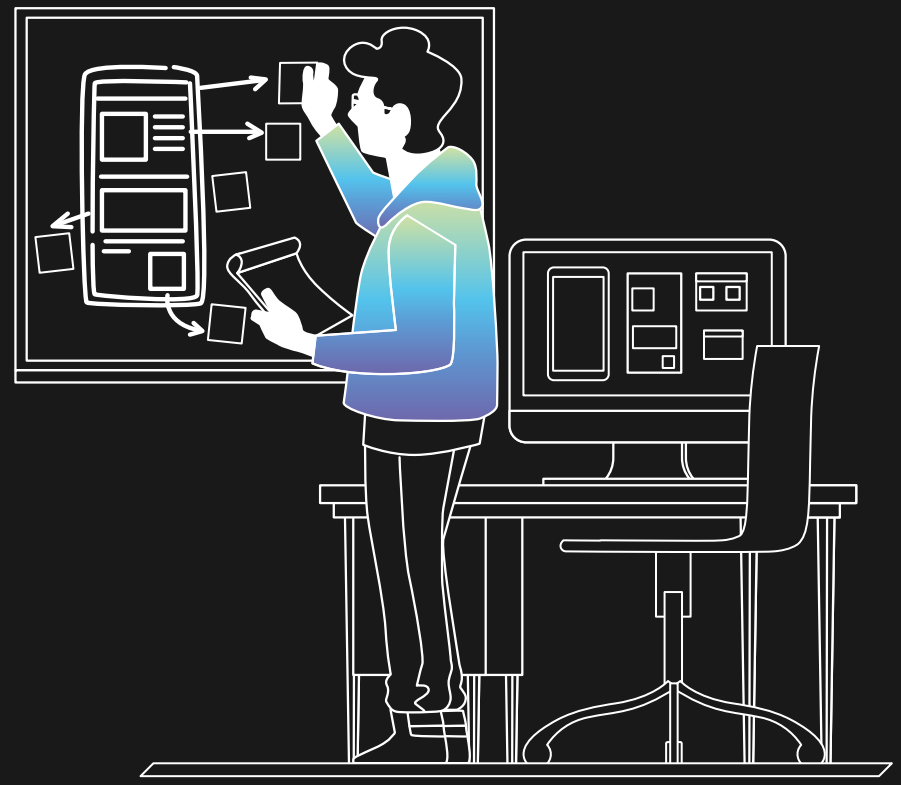
1. When the user enters a prompt, the topic generation chain (*topic_chain*) is invoked, which generates a topic based on the prompt and stores it in the *topic memory*.
2. The we invoke the advice generation chain (*advice_chain*), which offers what the chatbot thinks is the best advice give the topic. We update the *advice memory*.
3. The we invoke the financial institutions chain (*financial_institutions_chain*), which offers what the chatbot thinks is the best institutions that would have the investment vehicles of interest + potentially stock tickers of interest. We save the *financial institutions memory*.
4. This is all given to *SequentialChain* to execute.
5. The results are displayed on the UI (output + prompt histories stored in memory).

03

SOLUTION DEMO!

04

LIMITATIONS & CONSIDERATIONS



Addressing these issues can improve our solution and provide a better service:

Model Enhancements

- Model limitations, may need to update model to GPT-4
- Quality control and screen for hallucinations

Security & Privacy

- Privacy and security of user data and it's safeguarding
- Responsibility and ethics

Infrastructure

- System scalability
- Ongoing model updates
- User interface and user experience (UI/UX)

05

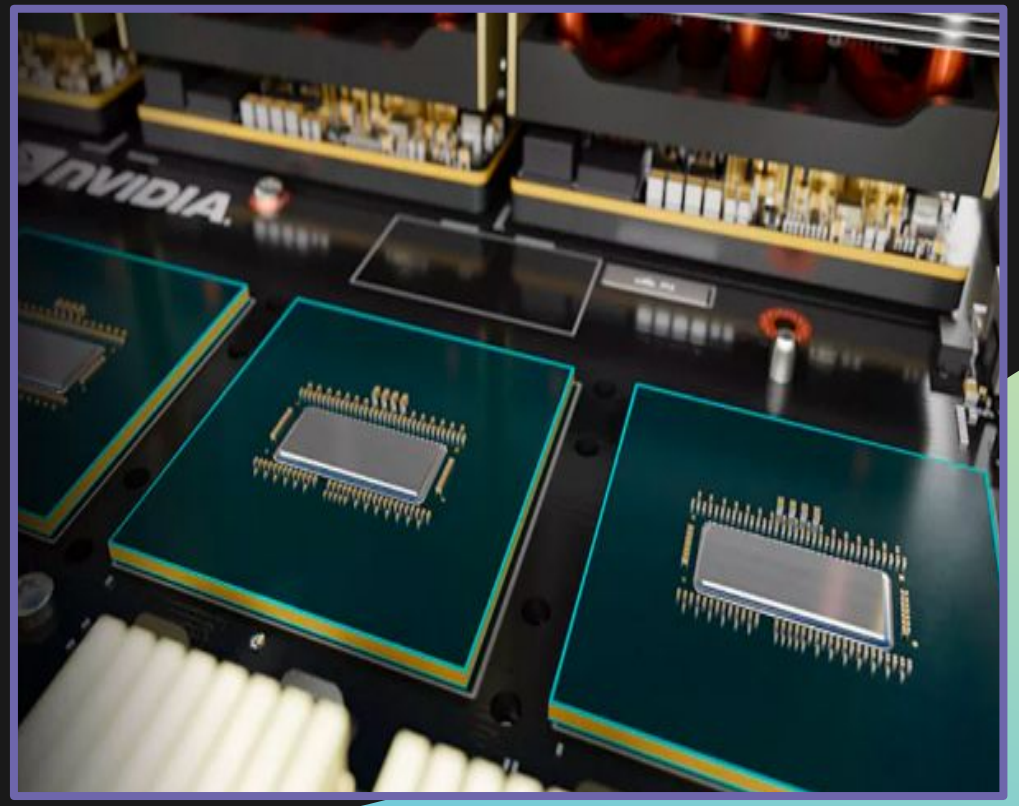
SCALABILITY

Scalability Solutions Include:

- prompt engineering techniques (automate the creation of prompts + create multiple prompt variations)
- cloud platforms (allow dynamic resource allocation)
- distributed systems (enable parallel processing and load balancing)

Scalability Challenges Include:

- high computational and data needs
- effective data management and distribution
- APIs and models are controlled and operated by OpenAI + +



06

EVALUATION

KEY PERFORMANCE INDICATORS

- Customer satisfaction
- Response time
- Customer retention

07

BIAS

& ALIGNMENT

How do we Counter Bias?

BIAS

- Quality Assurance and Monitoring output
- Prompt engineering Techniques

ALIGNMENT

- Elicitation
- Specification
- Verification

Thank you all for your Attention!

Any questions ❓