



The background is a light gray with various 3D geometric shapes scattered across it. These include a small cube in the top left, a large sphere in the top center, a rectangular prism in the top right, a cone in the middle right, a cylinder in the bottom left, a large sphere in the bottom center, and a small cube in the bottom right. There are also some wavy lines and other abstract shapes.

# **Risk Management and Generative AI: A project**

A presentation by the Busy Bees

# So... What's the problem?

In the financial markets today, risk management tools lack the narrative context required to comprehensively understand emerging risks and provide insights.



# What did we learn about risk management?

1. Risk management should come together holistically. There are many factors risk managers have to consider like market risk, operational risk, credit risk, etc.
2. Staying abreast of the news is crucial for prudent risk management.





# What's our solution?

We have two main features:

- 1) A global affairs sentiment analysis tool
- 2) A Large Language Model (LLM) chatbot

Let's get into more detail about what our features do!





1

# Global Affairs Sentiment Analysis tool

- Gathers real-time news from Reuters and applies [sentiment analysis](#) and [summarization models](#)
- Provide users with [insights](#) into how the economy and market are performing.

## Your markets brief as of 2023 Sep 08 02:06 AM

Initial claims for state unemployment benefits fell 13,000 to 216,000 last week. Sweden applied last year to join the defence alliance but Turkey and Hungary have yet to approve the bid. U.S. Secretary of State Antony Blinken said on a visit to Kyiv on Wednesday that Washington was transferring to Ukraine \$5.4 million in “assets seized from sanctioned Russian oligarchs”

**Positive  
Sentiments**

4

**Neutral  
Sentiments**

10

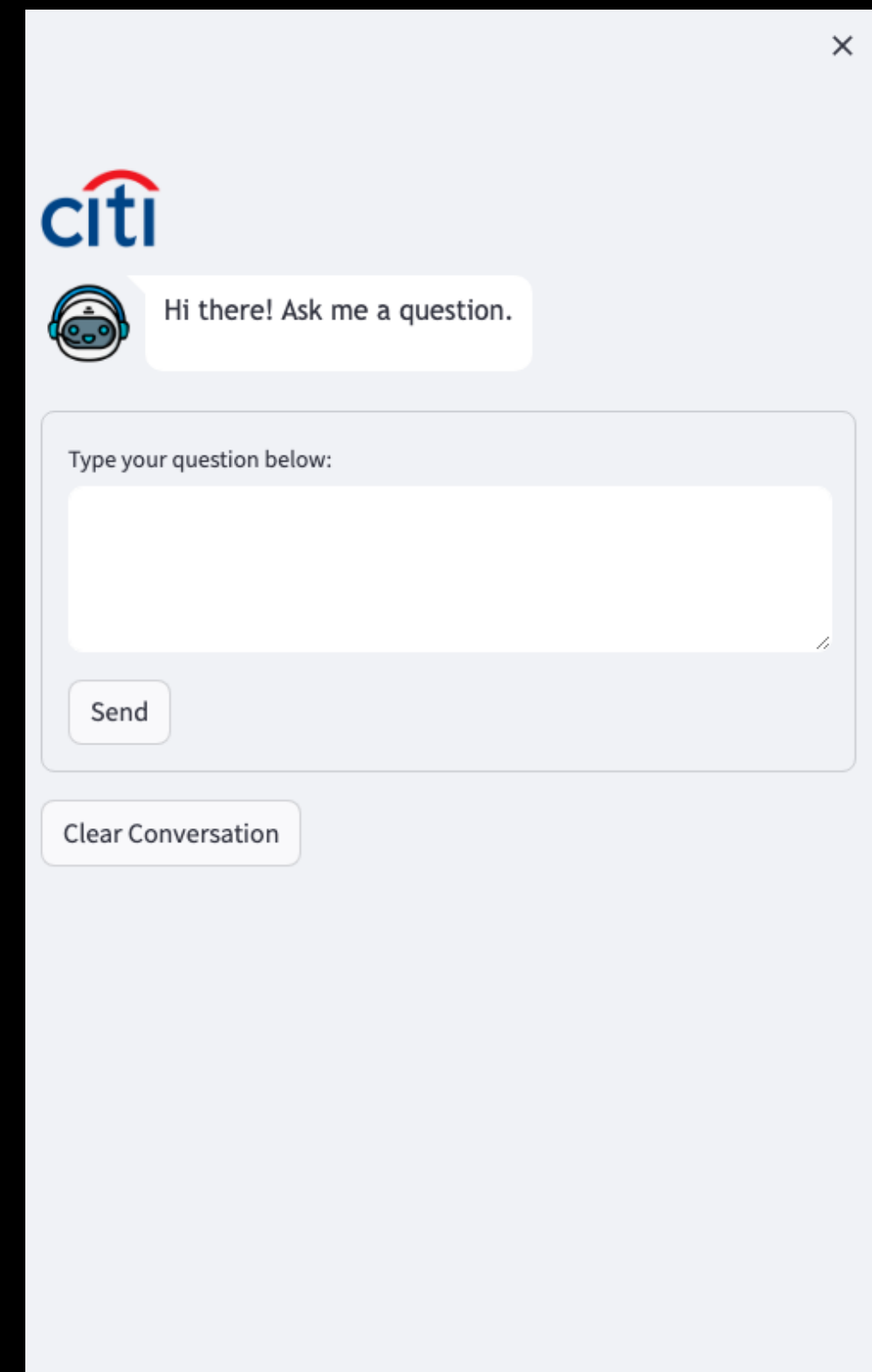
**Negative  
Sentiments**

24

2

# Large Language Model Chatbot

- Allows users to interact with a large language model chatbot and prompt it for [suggestions on mitigating risks](#) in various scenarios



# How do our solution's features come together to empower risk managers?

Our summarisation and sentiment analysis allows anyone to get a **brief overview of the pulse of the market** and potentially free up an analyst's morning.

Based on this morning brief provided by our website, users could prompt our chat agent for **suggestions on mitigating respective risks**. With this, we hope to **boost efficiency** and allow traders and risk managers to **process information more quickly**.





# Generative AI is clearly an incredibly powerful tool.

Its applications in tasks such as:

- information retrieval
- text generation
- sentiment analysis

are highly valuable for use.





# However, they also come with major data security concerns...

We are unsure where the data we put into such ai programs is being channelled to.

And especially in a corporate setting such as Citibank, where we are dealing with sensitive data, this is an even bigger concern.

So, how can we tap on the benefits while minimizing privacy risks?

# How do we address these concerns using AI?

Fine-tuned model



Based off Google's  
BERT

Pre-trained model



OpenAI's LLM  
Facebook's BART

# Our Tech Stack

1. Pytorch for **model training**
2. Hugging face for **open-sourced pre-trained models**
3. Selenium/BeautifulSoup for **web scraping**
4. MongoDB for **data persistence**



BeautifulSoup



mongoDB



**Time for a demo!**



# Possible Future Enhancements

## Where to next?

1. Train all our models in house  
(more resources are needed)

2. Tap on data from the bank  
to provide insights for clients

3. Backtest our models to better  
fit hyperparameters

4. Perform transfer learning



# Thank you!

Any questions for us?

