

# SneakerBot

Virtual Seller Chatbot Consultant

Team's name: US\_Driver

Team's code: 110

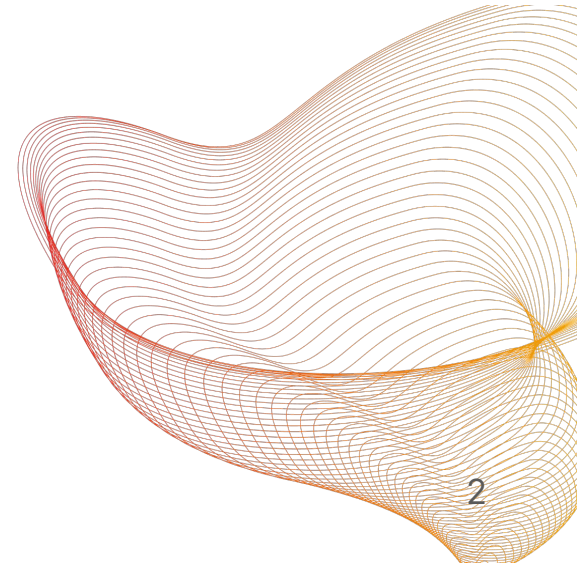


# Introduction

The current issue for fashion brands is enhancing the user experience in finding their preferred products.

**SneakerBot** assists customers in easily discovering desired products by providing necessary information.

Our MVP focuses on the dataset "**Dataset 1: Adidas and Nike Products**" and collects additional necessary information to train the model.



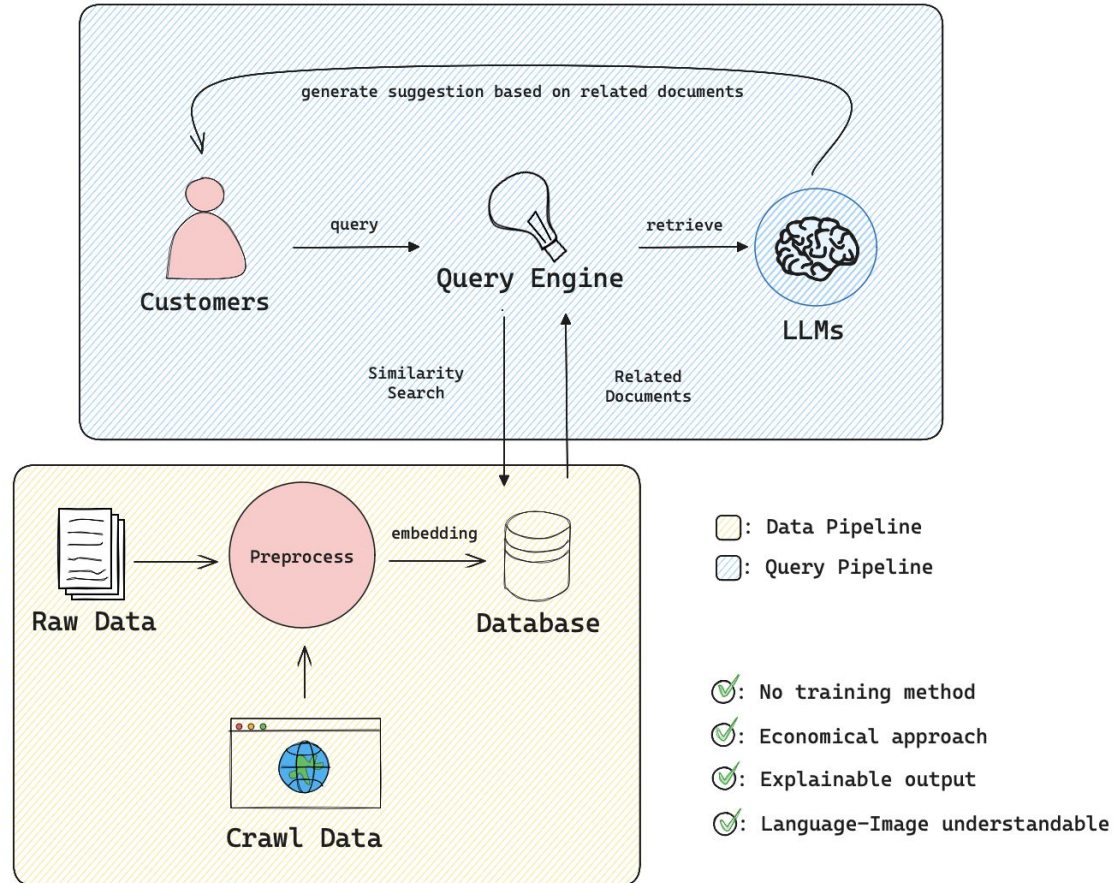


# Problem Statement

Nowadays, major fashion brands like Nike and Adidas are introducing more and more new products to keep up with market trends. Customers often spend a lot of time selecting fashion items in stores. While shops provide search engine on their websites, the sheer variety of products makes it time-consuming for customers to find what they need.

The MVP focuses on improving the search for preferred products and enhancing user experience by providing a chatbot consultant

# Solution Overview - Multimodal RAG



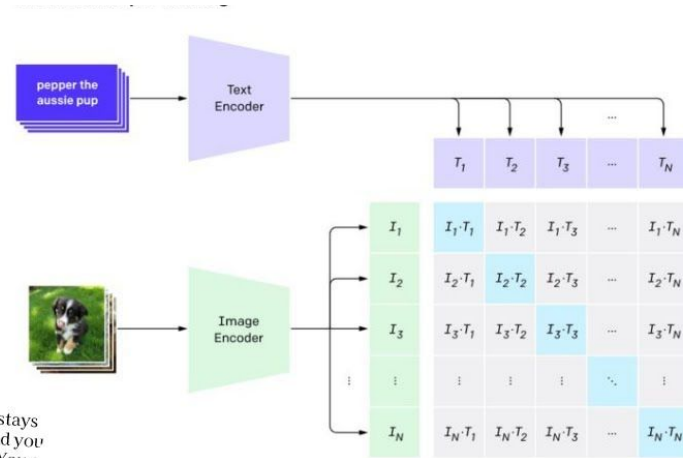
# Methodologies



CONNECTING TEXT AND IMAGES

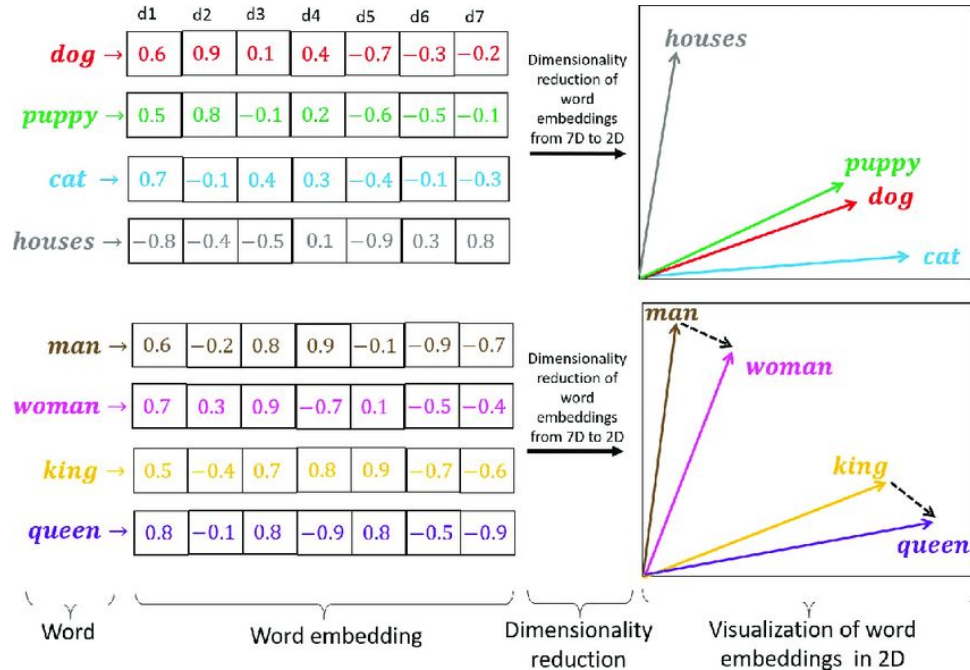


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First of all, we are utilizing OpenAI Vision to apply the technique of Grounded Language Image Pretrained (GLIP) in order to make the core connection of user query with any image of products in database. To convert images into captions or hashtags for future search.

# Methodologies



With the storage, we using Vector Storage, in which, all the texts would be encoded into vectors and stored as points in Dimension. Similarity Search would detect out which points is nearest and identify it as most similar.



# Methodologies

## Standard Prompting

### Model Input

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: The answer is 11.

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

### Model Output

A: The answer is 27. ❌

## Chain-of-Thought Prompting

### Model Input

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: Roger started with 5 balls. 2 cans of 3 tennis balls each is 6 tennis balls.  $5 + 6 = 11$ . The answer is 11.

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

### Model Output

A: The cafeteria had 23 apples originally. They used 20 to make lunch. So they had  $23 - 20 = 3$ . They bought 6 more apples, so they have  $3 + 6 = 9$ . The answer is 9. ✅



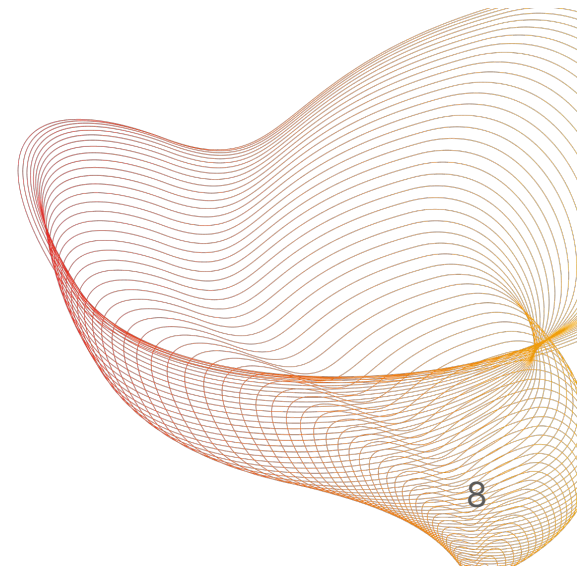
Finally, we using technical Chain of Thought (CoT) Prompting to improve the performance of chatbot, in which, it has to thought carefully before generate out final answer for user. In top of that, we introduce Reason-Action (ReAct) Agent, which is an innovation of CoT for the final version of chatbot.



# Core Functionality

The primary features and functionalities of the MVP:

- Efficient data exploration
- User-friendly interface
- Personalized recommendation
- Multimodal capability
- Real-time updates

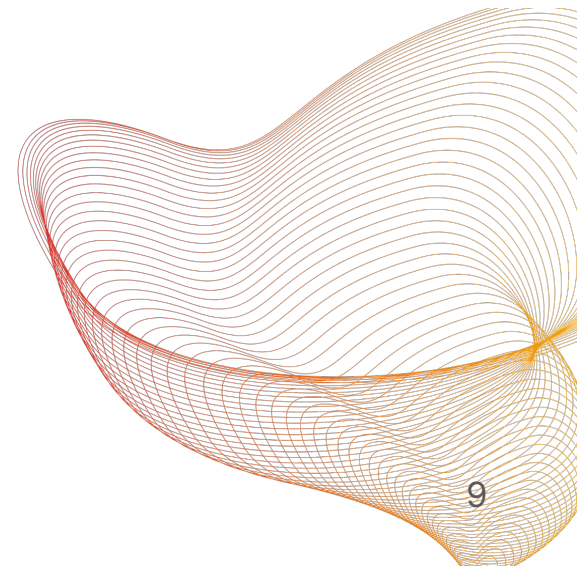




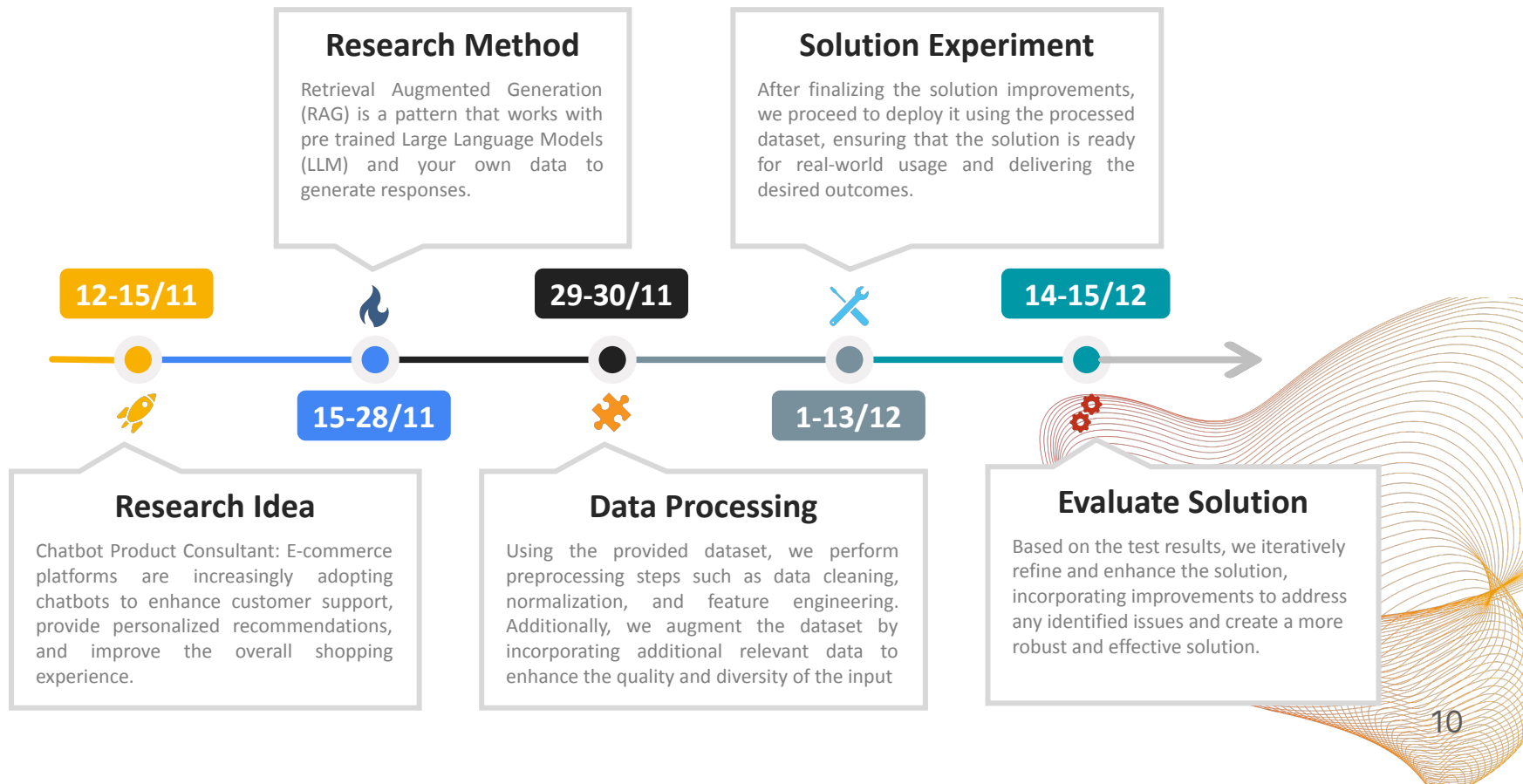


# Performance Metrics

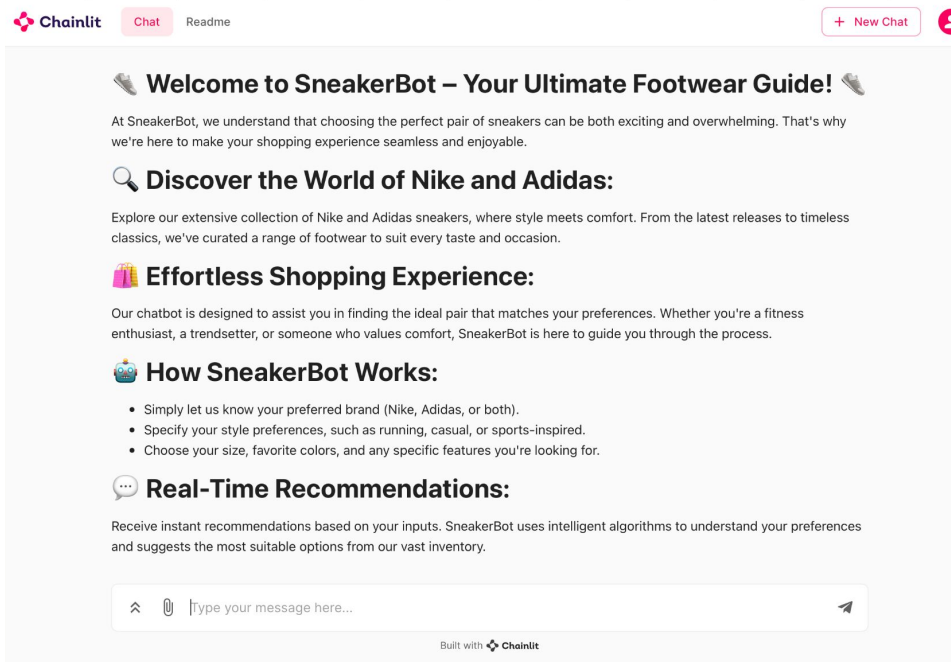
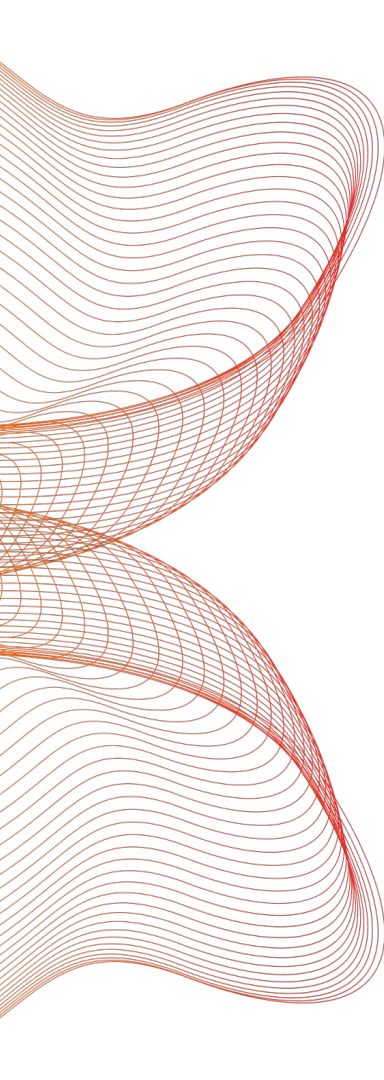
- **Sentence Similarity** using **Vector-based similarity**: use embeddings to capture semantic information and determine the similarity between two texts based on their vectors
- Type of methods:
  - Distributional Sentence Similarity
  - Average of Word Vectors
  - Learning Based Vectors
  - Skip-Thought Vectors



# Timeline



# User Interaction



The screenshot shows a web interface for 'SneakerBot' powered by Chainlit. At the top, there's a Chainlit logo, a 'Chat' button, and a 'Readme' link. On the right, there's a '+ New Chat' button and a user profile icon. The main content area has a heading 'Welcome to SneakerBot – Your Ultimate Footwear Guide!' with a sneaker icon. Below it, a paragraph explains the bot's purpose. The next section is 'Discover the World of Nike and Adidas:' with a magnifying glass icon, followed by a paragraph about the sneaker collection. Then, 'Effortless Shopping Experience:' with a shopping bag icon, followed by a paragraph about the chatbot's assistance. Next is 'How SneakerBot Works:' with a robot head icon, followed by a bulleted list of three steps: 1. Specify brand (Nike, Adidas, or both), 2. Specify style preferences (running, casual, or sports-inspired), and 3. Choose size, colors, and specific features. The final section is 'Real-Time Recommendations:' with a speech bubble icon, followed by a paragraph about instant recommendations. At the bottom, there's a chat input field with a paper plane icon on the right and a 'Built with Chainlit' footer.

**Welcome to SneakerBot – Your Ultimate Footwear Guide!**

At SneakerBot, we understand that choosing the perfect pair of sneakers can be both exciting and overwhelming. That's why we're here to make your shopping experience seamless and enjoyable.

**Discover the World of Nike and Adidas:**

Explore our extensive collection of Nike and Adidas sneakers, where style meets comfort. From the latest releases to timeless classics, we've curated a range of footwear to suit every taste and occasion.

**Effortless Shopping Experience:**

Our chatbot is designed to assist you in finding the ideal pair that matches your preferences. Whether you're a fitness enthusiast, a trendsetter, or someone who values comfort, SneakerBot is here to guide you through the process.


**How SneakerBot Works:**

- Simply let us know your preferred brand (Nike, Adidas, or both).
- Specify your style preferences, such as running, casual, or sports-inspired.
- Choose your size, favorite colors, and any specific features you're looking for.

**Real-Time Recommendations:**

Receive instant recommendations based on your inputs. SneakerBot uses intelligent algorithms to understand your preferences and suggests the most suitable options from our vast inventory.

⌵ 🗂️ | type your message here... ➡️

Built with  Chainlit

This is the first page of our Chatbot, in which, there is an introduction of Sneaker Bot Seller. You could start the conversation with the box below.

# User Interaction

User  
22:51:01

I love this kind of Hoodie, do you any product that same with this ? Especially cheap and color similar



Chatbot  
22:51:19

I can certainly help you find a hoodie similar to the one you like! Based on the color and style you've shared, I can recommend the following option from the product list:

1. adidas Sportswear Future Icons Hoodie (Color: Purple, Price: \$46.00)
  - While it is not an exact color match as it comes in purple, this hoodie has a relaxed and comfortable style that is versatile for different occasions. And it's quite affordable too. You can view it and purchase from this URL: [adidas Sportswear Future Icons Hoodie](#)

Would you like to look into this option or is there any specific feature you would want the hoodie to have?

This is a sample query of customer, where user found an attracted image of Hoodie, and he wants to find relevant sample with an economical price. And the chatbot give out directly the recommendation of product for user and its website.



## Limitations and Future Enhancements

The limitation of vector search is the accuracy of object relationship.

The future work is to replace the vector search with graph search that brings the better result.



## Conclusion

The MVP aims to improve the user experience by offering a chatbot consultant that not only enhances product discovery but also provides personalized recommendation.

The potential impact and benefits of the AI solution:

- **Enhanced efficiency:** Accelerated decision-making through the rapid analysis of vast datasets.
- **Cost savings:** Streamlining of business processes, resulting in cost savings and resource optimization.
- **Responsive Customer Support:** In-app support features and prompt customer service to address user queries.