

## **Objectives:**

- Develop a fashion query response system using AI models for detailed, user-friendly answers to fashion-related queries.
- Enhance the user experience by providing informative and contextually relevant responses to help users find fashion items based on preferences.

## **Design:**

- Search Layer: Retrieves relevant fashion items from the dataset using keyword matching or predefined criteria.
- Generation Layer: Uses advanced AI models like GPT-3.5 to generate detailed, context-aware responses in natural language.

## **Implementation:**

- Data Preprocessing:
  - Formatted CSV dataset for quality and readability.
  - Replaced blank entries, standardized decimal points, and removed unnecessary columns.
  - Cleaned text columns by removing HTML tags and extra characters.
- Model Integration:
  - Integrated AI models such as GPT-3.5 for generating responses.
  - Processed queries through the model for detailed and contextually relevant replies.
- Query Response Generation:
  - Processed user queries through both the search and generation layers.
  - The search layer retrieved relevant items, while the generation layer provided detailed AI-generated responses.

## **Lessons Learned:**

- The generation layer produces more detailed and comprehensible responses compared to the search layer.
- Unlike the search layer, which relies on keyword matching, the generation layer uses advanced AI like GPT-3.5 to deliver context-aware, dynamic replies.

- The generation layer offers nuanced explanations and engaging content in natural language, improving user experience.
- Its adaptability to various query formats and customization enhances its value for complex information tasks.
- Overall, while the search layer is efficient for retrieving information, the generation layer excels in providing high-quality, readable, and tailored responses.

### Future Improvements :

- Adding documents to embeddings is a sequential process, can leverage a vector store which can facilitate sync text as embeddings in parallel , for example Mosaic AI Vector store can sync the text to embeddings in the open storage delta format in few seconds -
   
<https://docs.databricks.com/en/generative-ai/vector-search.html>
- Package all the components as chain and deploy as single unit

### Query 1 -

#### Search Layer:

Query:  
What are the customization options and fabric details for the green and blue embroidered lehenga choli set with mirror work, including the blouse, lehenga, and dupatta?

**Top 3 Search Layer**

ID	Image Preview
ID: 18508814	
ID: 18088552	
ID: 11753804	

Just now (<1s)

results\_df

	Metadata	Documents	Distances	IDs
0	{'Brand': 'DRESSTIVE', 'Colour': 'Green', 'Des...}	Green and blue embroidered lehenga choli with ...	0.151855	18508814
1	{'Brand': 'Inddus', 'Colour': 'Green', 'Descri...}	Green embroidered lehenga choli with dupatta, ...	0.171313	18088552
2	{'Brand': 'Mitera', 'Colour': 'Green', 'Descri...}	Green and pink embroidered mirror work lehenga...	0.182460	11753804

## Generative Layer:

1. \*\*Green and Blue Embroidered Lehenga Choli with Mirror Work (Item ID: 18508814)\*\*:
  - \*\*Brand:\*\* Not specified
  - \*\*Description:\*\* This set features a green and blue embroidered lehenga choli with mirror work.
  - \*\*Customization Options:\*\* The customization options for this set are not explicitly mentioned in the description.
  - \*\*Fabric Details:\*\*
    - \*\*Blouse:\*\* Fabric type and details for the blouse are not specified.
    - \*\*Lehenga:\*\* The fabric details for the lehenga are not provided in the description.
    - \*\*Dupatta:\*\* The fabric details for the dupatta are not mentioned.
2. \*\*Green Embroidered Lehenga Choli with Dupatta (Item ID: 18088552)\*\*:
  - \*\*Brand:\*\* Not specified
  - \*\*Description:\*\* This item showcases a green embroidered lehenga choli with a dupatta.
  - \*\*Customization Options:\*\* Customization details are not explicitly mentioned in the description.
  - \*\*Fabric Details:\*\* Fabric specifics for the blouse, lehenga, and dupatta are not provided.
3. \*\*Green and Pink Embroidered Mirror Work Lehenga (Item ID: 11753804)\*\*:
  - \*\*Brand:\*\* Not specified
  - \*\*Description:\*\* This piece is a green and pink embroidered mirror work lehenga.
  - \*\*Customization Options:\*\* Customization information is not detailed in the description.
  - \*\*Fabric Details:\*\* The fabric details for the blouse, lehenga, and dupatta are not explicitly outlined.

ID: 18508814



ID: 18088552



ID: 11753804



## Query 2 - Search Layer -

Query:  
What are the color details and key features of the grey colorblocked sweatshirt?

### Top 3 Search Layer

ID: 16379656



ID: 13255768



ID: 13019534



+ Code + Text

Just now (<1s)		36	
results_df			
Metadata	Documents	Distances	IDs
0 {'Brand': 'Vero Moda', 'Colour': 'Grey', 'Desc... Grey and green colourblocked sweatshirt has a ...	0.265021	16379656	
1 {'Brand': 'FILA', 'Colour': 'Red', 'Descriptio... Red and grey colourblocked sweatshirt, has a r... 0.268998 13255768			
2 {'Brand': 'Campus Sutra', 'Colour': 'Pink', 'D... Pink and grey colourblocked sweatshirt, has a ... 0.272480 13019534			

### Generative layer :

Based on the details from the provided search results, here are the color details and key features of grey colorblocked sweatshirts from the top 3 relevant fashion items:

1. Grey and Green Colourblocked Sweatshirt:
  - Colors: Grey and green
  - Key Features: The sweatshirt has a colorblocked design with grey as the primary color and green as the secondary color.
2. Pink and Grey Colourblocked Sweatshirt:
  - Colors: Pink and grey
  - Key Features: Features a colorblocked design with grey as the primary color and pink as the secondary color.
3. Red and Grey Colourblocked Sweatshirt:
  - Colors: Red and grey
  - Key Features: This sweatshirt showcases a colorblocked style with grey as the primary color and red as the secondary color.

For more detailed information on specific design elements, fabric composition, sizing, and pricing of the grey colorblocked sweatshirt, I recommend exploring the individual fashion items for a comprehensive overview. You can refer to the respective product pages for further details on the style, brand, and specific features of the grey colorblocked sweatshirt in the cited fashion items.

ID: 16379656



ID: 13019534



ID: 13255768



## Query 3 -

### Search Layer -

Query:  
I'm searching for a versatile black leather jacket, suitable for various occasions and effortlessly complementing any outfit.  
Preferably in size XL

#### Top 3 Search Layer

ID: 14455424



ID: 15997714



ID: 18153246



results_df			
	Metadata	Documents	Distances
0	{'Brand': 'Leather Retail', 'Colour': 'Black', ...}	Black graphic printed lightweight leather jack...	0.292431 14455424
1	{'Brand': 'Tokyo Talkies', 'Colour': 'Black', ...}	Black solid leather jacket with zip detail, ha...	0.300976 15997714
2	{'Brand': 'Justanned', 'Colour': 'Black', 'Des...}	Black solid leather jacket with zip detail, ...	0.302812 18153246

### Generative Layer -

Based on your search criteria for a versatile black leather jacket in size XL, here are the top 3 relevant results that match your request:

1. \*\*Black Solid Leather Jacket with Zip Detail\*\*:

- Description: A black solid leather jacket featuring zip detail, making it a stylish and versatile choice.
- Brand: Not specified in the metadata.
- ID: 15997714

2. \*\*Black Solid Leather Jacket with Zip Detail\*\*:

- Description: Another black solid leather jacket with zip detail, offering a classic and timeless look suitable for various occasions.
- Brand: Not specified in the metadata.
- ID: 18153246

3. \*\*Black Graphic Printed Lightweight Leather Jacket\*\*:

- Description: This jacket combines black leather with graphic printing, creating a unique and fashionable piece.
- Brand: Not specified in the metadata.
- ID: 14455424

Based on the provided descriptions, the first two black solid leather jackets with zip detail seem to align closely with your search for a versatile black leather jacket. While the specific brand information is not available, these jackets offer a classic and stylish option that can effortlessly complement various outfits for different occasions. For more detailed information or to consider purchase options, it is recommended to explore further on our platform.

ID: 15997714



ID: 18153246



ID: 14455424

