

# Fashion Model Search AI

## Project Description:

This project, based on an upGrad assignment on Semantic Search, consists of three layers and utilizes the Myntra dataset sourced from Kaggle. The dataset has been modified specifically for this project. For comprehensive details, please refer to the Project Report titled "Fashion Search AI."

The image folder contains a random selection of 100-200 images. To access the original dataset and the complete image folder, please visit the following link: [Myntra Fashion Product Dataset on Kaggle](<https://www.kaggle.com/djagatiya/myntra-fashion-product-dataset>).

## Objectives:

The primary goal of this project is to create an advanced fashion query response system leveraging AI models to deliver comprehensive and user-centric answers to fashion-related inquiries. This system is designed to improve user experience by providing detailed, contextually relevant information, aiding users in discovering fashion items that align with their preferences.

## Design:

The project consists of two key components: the search layer and the generation layer. The search layer focuses on identifying relevant fashion items from the dataset using keyword matching or specified criteria. The generation layer leverages sophisticated AI models like GPT-3.5 to create detailed and context-aware responses to user queries, delivering answers in natural language.

## Implementation:

The implementation process involved multiple steps, including data preprocessing, model integration, and the generation of query responses.

## Model Integration:

Advanced AI models, such as GPT-3.5, were integrated into the system to handle user queries. These queries were processed by the model to generate detailed and contextually relevant responses.

## Query Response Generation:

User queries were processed through both the search and generation layers. The search layer retrieved relevant fashion items from the dataset, while the generation layer used AI models to create detailed, contextually relevant responses in natural language.

## Testing Queries:

Query Example 1 - I am looking for party wear in pink color in XL size within 5000 indian rupees

## Generation Layer Response:

[39] Based on your query for party wear in pink color in XL size within 5000 Indian rupees, here are some relevant options you might consider:

1. \*\*Pink Lehenga Choli with Short Sleeves Blouse by Karigari\*\*

- Brand: Karigari

- Description: This outfit includes a pink lehenga choli with a short sleeves blouse.

2. \*\*Pink Lehenga Choli with Three-Quarter Sleeves Blouse by Bitiya by Bhama\*\*

- Brand: Bitiya by Bhama

- Description: Featuring a pink lehenga choli set with a three-quarter sleeves blouse.

3. \*\*Pink and Blue Printed Lehenga Choli with Dupatta by Anouk\*\*

- Brand: Anouk

- Description: A stunning pink and blue printed lehenga choli set paired with a dupatta.

Unfortunately, the specific sizes of XL and prices within 5000 Indian rupees are not mentioned in the provided search results. For more detailed information on availability in XL size and price, it is recommended to visit the respect.

If you are interested in exploring these party wear options further, you can use the provided IDs (13676910, 14432238, 18331308) to search for these items on the corresponding fashion platforms.

Please feel free to check our website for the latest updates on availability and pricing for these fashion items.


ID: 13676910

ID: 14432238

ID: 18331308

ID: 12307502

ID: 16316688



8s

completed at 11:42 AM


## Search Layer Response:

Query:


I am looking for party wear in pink color in XL size within 5000 indian rupees.

Top 5 Search Layer


ID: 16316688




ID: 18331308




ID: 14432238



ID: 13676910



ID: 12307502



IDs	Documents	Distances	Metadatas
0 16316688	Pink printed lehenga choli with dupatta.-br>Pl...	0.3058576285839081	{"Brand": "Sangria", "Colour": "Pink", "Descri...
1 18331308	Pink and blue printed lehenga choli with dupat...	0.30689823627471924	{"Brand": "Anouk", "Colour": "Pink", "Descri...
2 14432238	Pink lehenga choli.-br>Pink blouse, three-quart...	0.3077596426010132	{"Brand": "Bitiya by Bhama", "Colour": "Pink", ...
3 13676910	Pink lehenga choli.-br>Pink blouse, short slee...	0.3117115795612335	{"Brand": "Karigari", "Colour": "Pink", "Descr...
4 12307502	Pink self design kurta with trousers.-br>Pink s...	0.3129189610481262	{"Brand": "Prakhyra", "Colour": "Pink", "Descr...

Query Example 2 - I am looking for Jeans and top for traveling use in any color in XL size price range is 3500 indian rupees

Generation Layer Response:

Based on your query for Jeans and top for traveling in XL size and a budget of 3500 Indian rupees, here are some options from the top 3 relevant search results:

1. Calvin Klein Jeans - Blue Jeans

Brand: Calvin Klein Jeans

Color: Blue

Description: Coloured shade, no fade blue jeans perfect for traveling.

Price: Available in XL size within your budget range.

2. FREAKINS - Purple Jeans

Brand: FREAKINS

Color: Purple

Description: Coloured shade, no fade purple jeans suitable for travel wear.

Price: Check for availability in XL size and within your specified budget.

3. Trendyol - Brown Jeans

Brand: Trendyol


Color: Brown

Description: Coloured shade, no fade brown jeans ideal for travel outfits.


Price: Verify if available in XL size and falls within your budget requirements.

For more details on the specific sizes, pricing, and availability of these items, please visit our website page. These options offer a variety of colors and styles that may suit your travel needs.


ID: 19008506




ID: 17653934




ID: 18769570



ID: 17570458




ID: 18542956




Search Layer Response:


ID: 17653934




ID: 18769570




ID: 17570458



ID: 18542956



ID: 19008506



	Metadatas	Documents	Distances	IDs
0	{'Brand': 'FREAKINS', 'Colour': 'Purple', 'Des...	<ub><lb>Coloured shade, no fade purple jeans</l...	0.361031	17653934
1	{'Brand': 'Trendyol', 'Colour': 'Brown', 'Desc...	<ub><lb> Coloured shade, no fade brown jeans...	0.362822	18769570
2	{'Brand': 'SHOWOFF', 'Colour': 'Brown', 'Descr...	<ub><lb>Coloured shade, no fade grey jeans</li>...	0.366658	17570458
3	{'Brand': 'URBANIC', 'Colour': 'Red', 'Descrip...	<ub><lb>Coloured shade, no fade red jeans</li>...	0.369414	18542956
4	{'Brand': 'Calvin Klein Jeans', 'Colour': 'Blu...	<ub><lb> Coloured shade, no fade blue jeans ...	0.369899	19008506

Challenge Faced:

- ChromaDB embedded data storing process is very time consuming
- Data Preprocessing
- Chunking is not done due to time constraints and we preprocess the data and it is well structured.

## **Lessons Learned:**

- Proper data preprocessing is crucial for ensuring data quality and readability, while integrating advanced AI models can significantly enhance the system's capabilities.
- Additionally, handling large datasets necessitates careful consideration of memory constraints and the implementation of efficient data processing techniques.

## **Future Scope:**

The project was implemented as a Flask web application, featuring rephrased prompts and interactive sessions with criteria-based filters to enhance user interaction and experience.

## **Perspective:**

### **Comparison of Search and Generation Layers:**

#### **Analyst's Perspective**

From an analytical standpoint, comparing the outputs of the search and generation layers reveals that the generation layer produces more detailed and comprehensible responses. The search layer retrieves relevant results based on keyword matching and predefined criteria, while the generation layer utilizes advanced AI models such as GPT-3.5 to dynamically generate responses. This advanced capability allows for nuanced explanations and user-friendly responses, enhancing the overall experience. The flexibility of the generation layer to adapt to various query formats and provide customized responses makes it particularly valuable for tasks requiring in-depth understanding and effective communication of information.

#### **Technical Perspective**

From a technical perspective, the generation layer outperforms the search layer in terms of detail and readability. The search layer relies on keyword matching and predefined criteria to fetch relevant results, whereas the generation layer leverages advanced AI, such as GPT-3.5, to create responses that incorporate context and provide extensive information. This leads to more informative and user-friendly outputs. The generation layer's capability to understand query context and generate natural language responses makes it versatile and suitable for diverse query formats, thus significantly improving the quality of the output and user experience.

## **User Experience Perspective**

From a user experience perspective, the generation layer significantly enhances the quality of responses compared to the search layer. The search layer retrieves information based on keywords, which is efficient but often lacks depth. The generation layer, using advanced AI models like GPT-3.5, generates detailed, context-aware responses that are easier to read and understand.