

VIRTUAL SPORTS CLOTHES TRY-ON

Lý Thuyết Toán Tổ Hợp - Team code: 66



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OVERVIEW OF PROBLEM

Online clothes shopping lacks the ability to try items on beforehand, making it challenging to choose the right size, color, and style. As a result, customers often receive items that don't meet their expectations or fit properly. The inability to assess quality, texture, and fit in person leads to frustration and disappointment for many online shoppers.



THE PROBLEM IN NUMBERS

20-30%

The average ecommerce
return rates.

\$817B

Consumers returned
products worth.

26%

Consumers chose clothing as
the most returned purchases.

WHO IS IMPACTED BY THIS PROBLEM?

1. The shoppers

Shoppers cannot try on clothes before making a purchase leading to uncertainties about whether a garment will fit correctly or suit one's style.



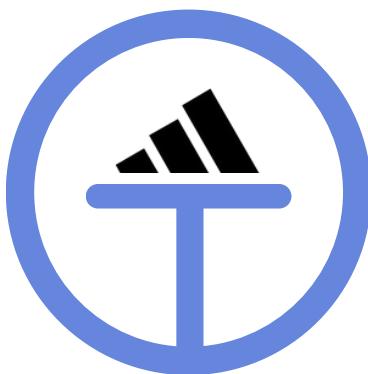
2. The retailers

Retailers struggle with higher return rates, improving customers online shopping experiences and maintaining customer trust and loyalty.



Solution

OUR MVP:



VIRTUAL SPORTS CLOTHES TRY - ON



Overview of MVP

Our MVP virtual try-on is a chatbot application and encompasses necessary functionalities to meet customers' demands for searching and virtual trying on clothes, assisting their purchase decisions, and potentially boosting profits for the store.

It has two core features and uses chatbot to interact with users.



Solution

FEATURE #1

Try - On

We decided to adopt **2D image - based Virtual Try - On (VTON) technologies.**

Receive input images capturing the upper body of the users and the clothing chosen by them.

Return clothing try-on images to help users visualize themselves wearing the selected product.



Solution

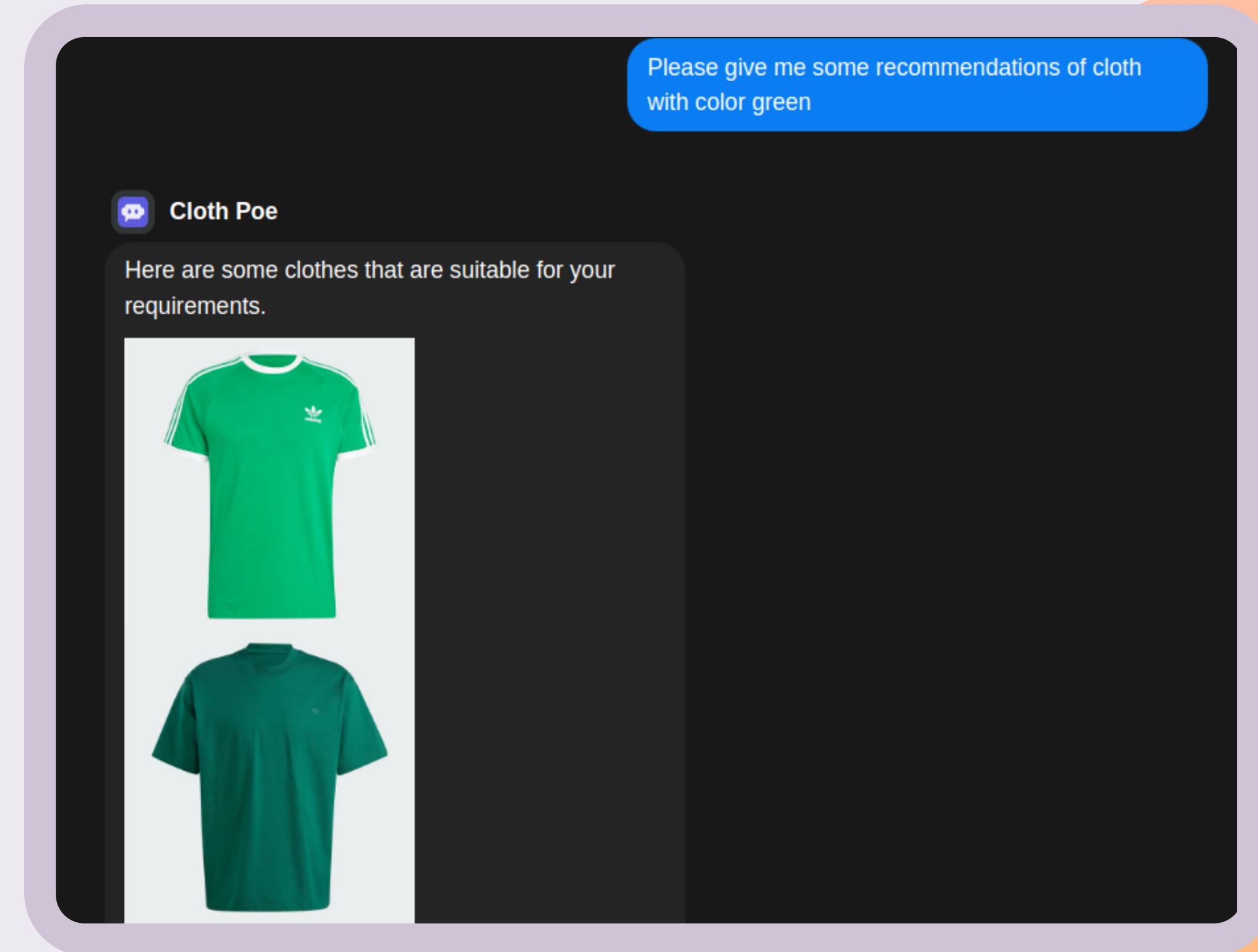
FEATURE #2

Find Products

Receive input as a description of the customer's desired product.

Return images of the products with the highest suitability from the database.

Continue assisting in the search based on customer preferences and additional descriptions provided.



INTERACTION METHOD

Chatbot

Guiding users on utilizing functionalities.

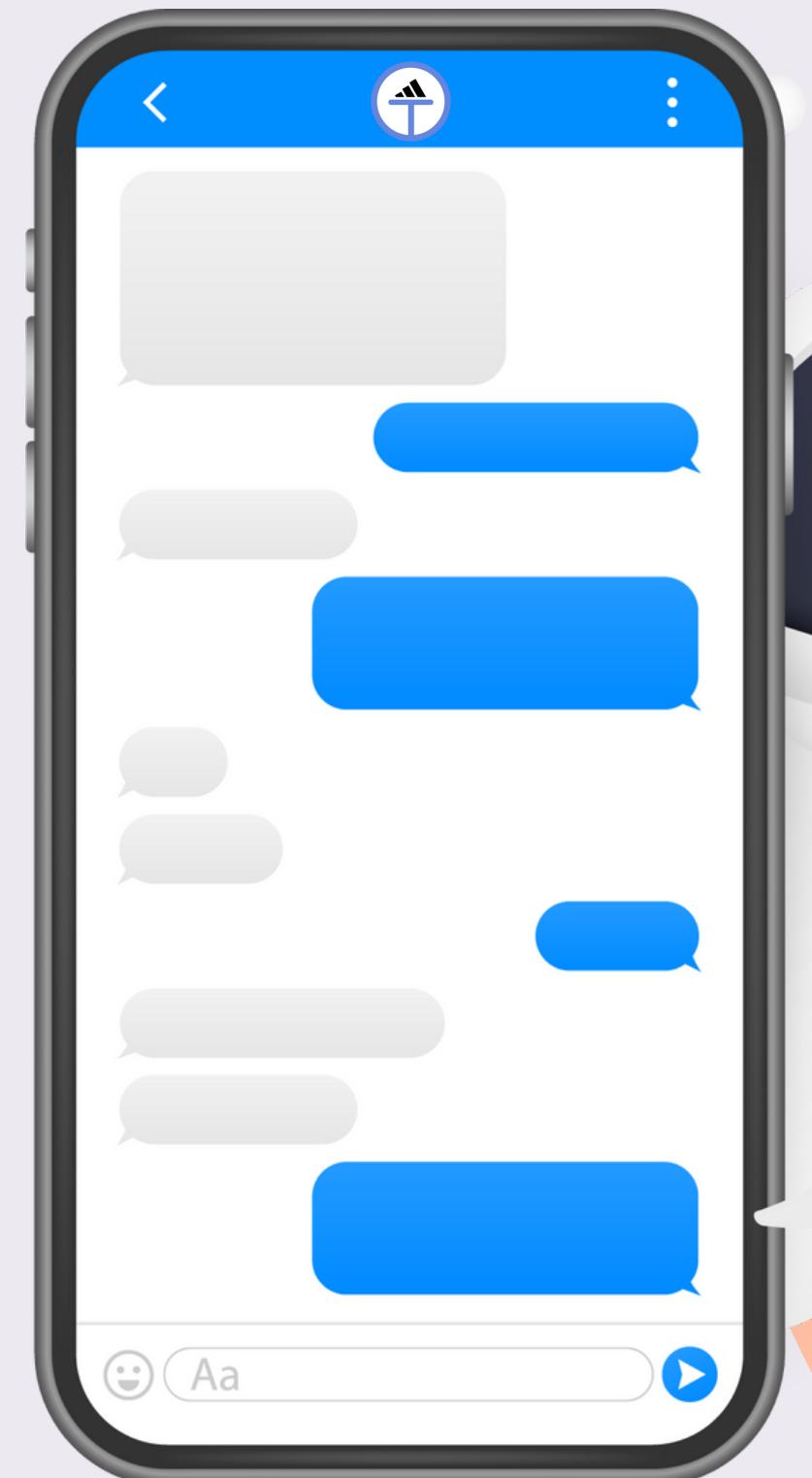
Sending the results of the functions to the users.

Taking care of users (customers).

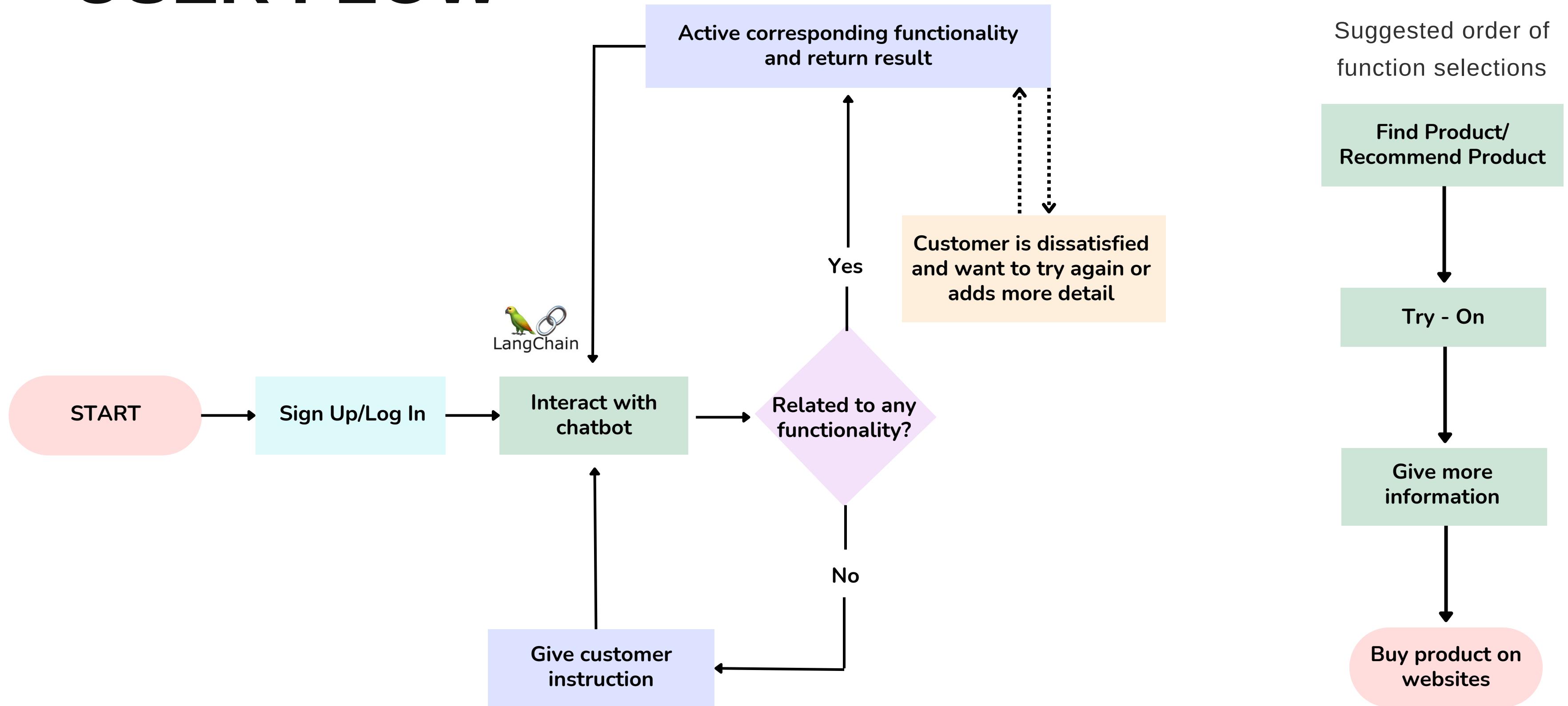
OTHER FEATURES

Recommend Size

Provide Information Of Product Chosen.

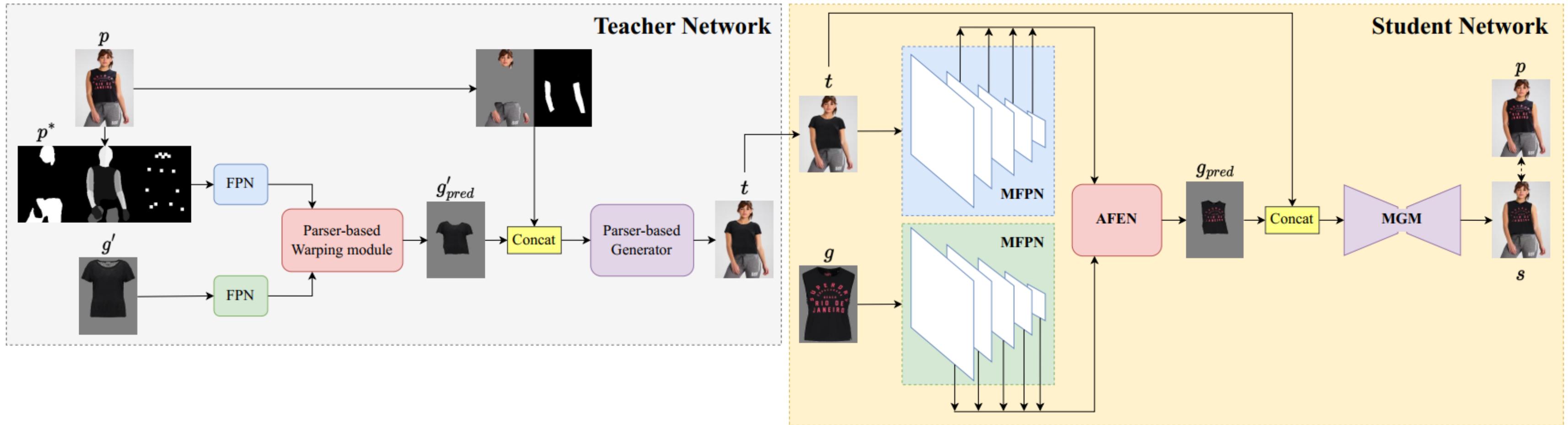


USER FLOW



Try - on Functionality

Core Model: DM-VTON (Distilled Mobile Real-time Virtual Try-On)



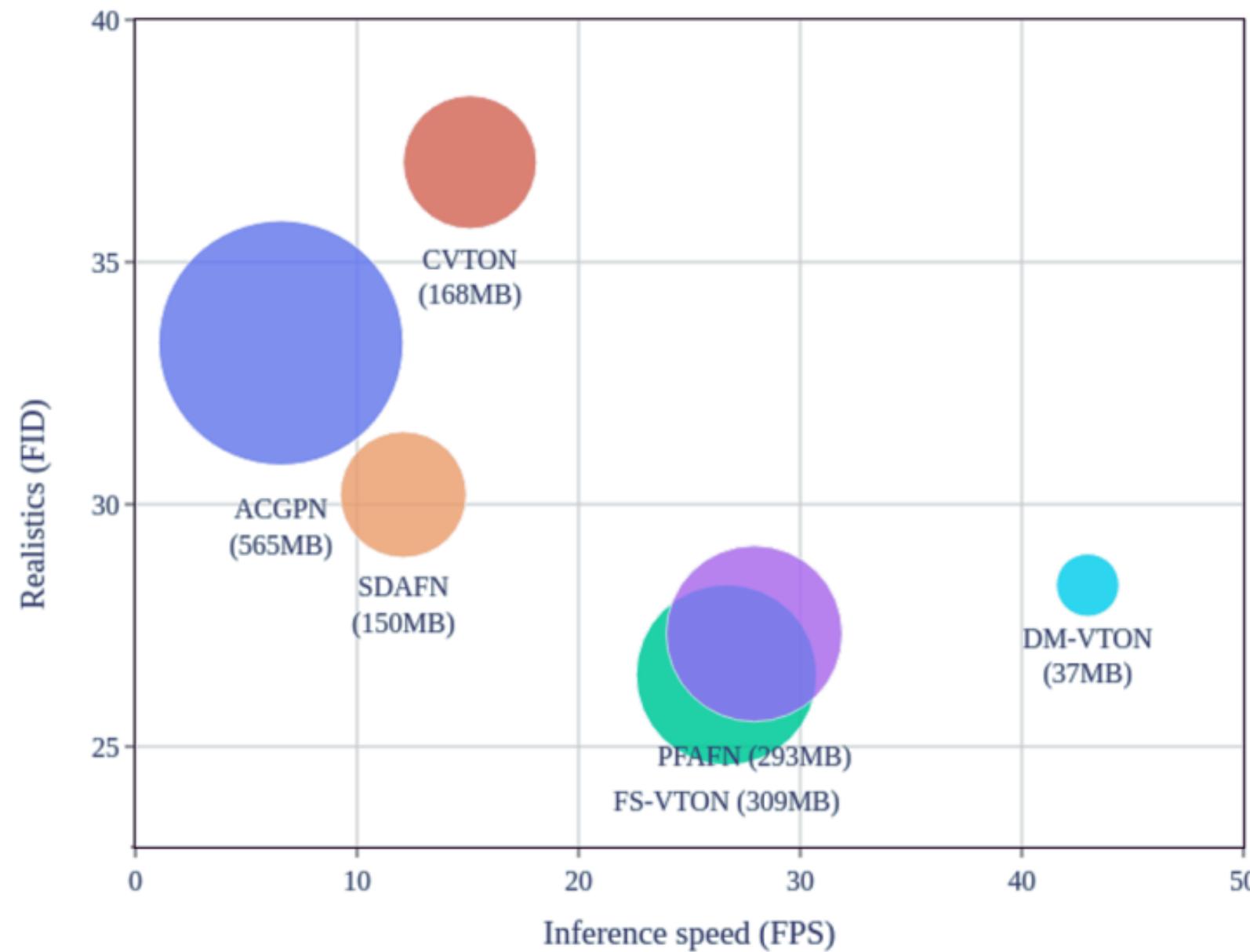
Model consists of two networks: **Teacher** and **Student** networks.

Both include three main components: Feature extractor, clothes-warping module, and generator.

The parses-based Teacher network generates a synthetic input as the input for training the Student network.

Try - on Functionality

Core Model: DM-VTON (Distilled Mobile Real-time Virtual Try-On)



STRENGTH

- Significantly reduce inference speed and memory used.
- Ensure high-quality output.



Make it easier to deploy and operate on AR devices.

Preprocessing Data

Remove background, resize padding to generate input images that align with the model, assisting in producing better output results.

Proactively create product masks to save time during inference execution.

Understanding customer

Utilize Langchain to apply Large Language Model (LLM) in comprehending customer requests, leading to suitable functions and aiding in product searches based on customer descriptions without requiring them to condense their descriptions into specific keywords for filtering.

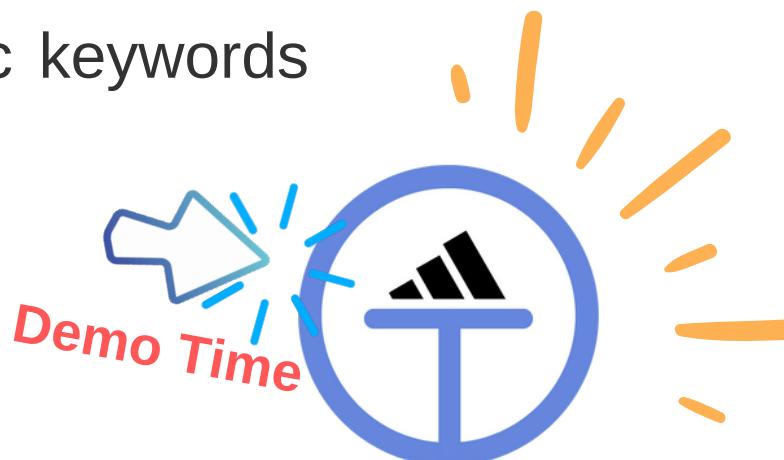


Remove background

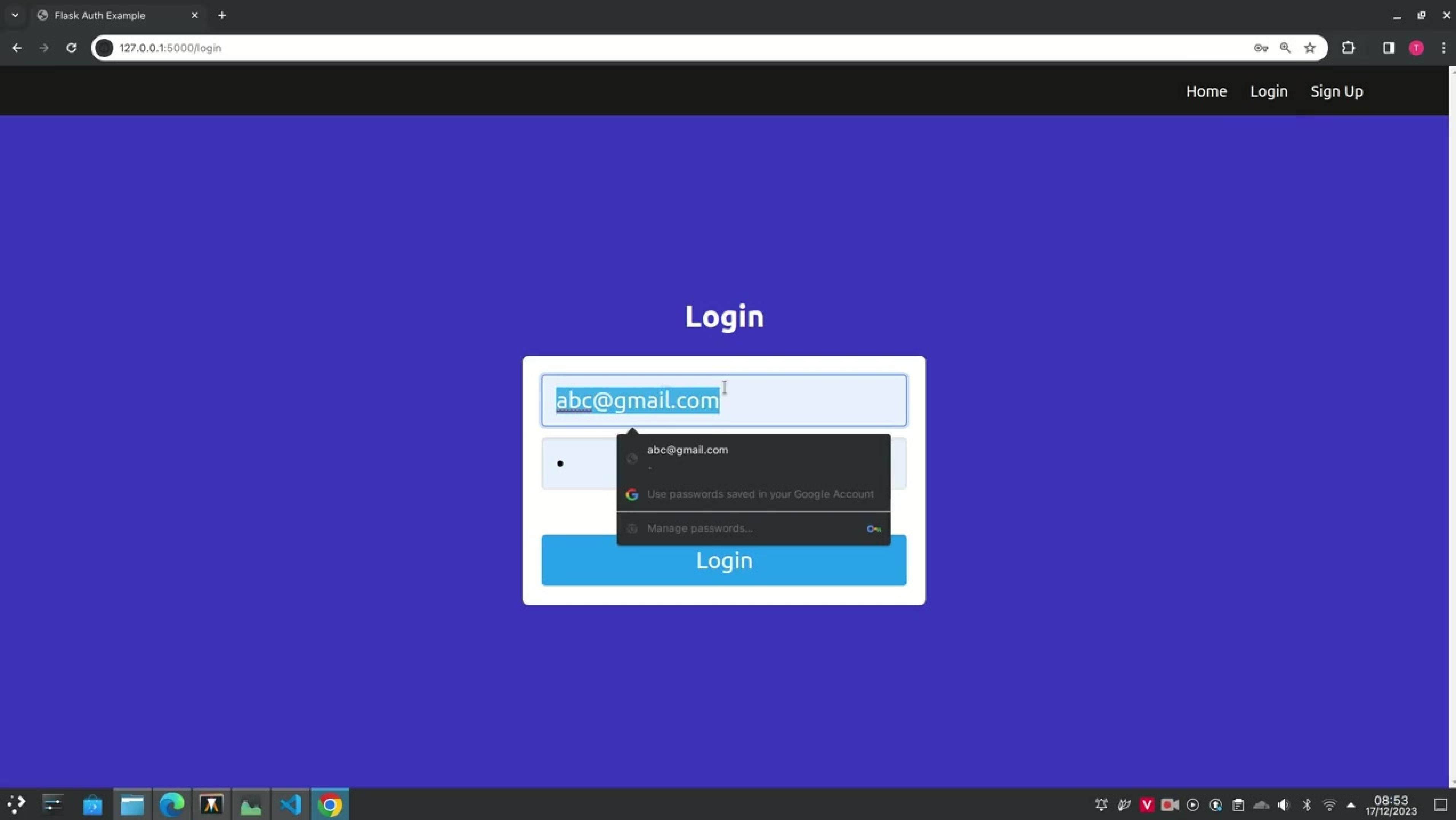
Resize and padding



Preprocessing



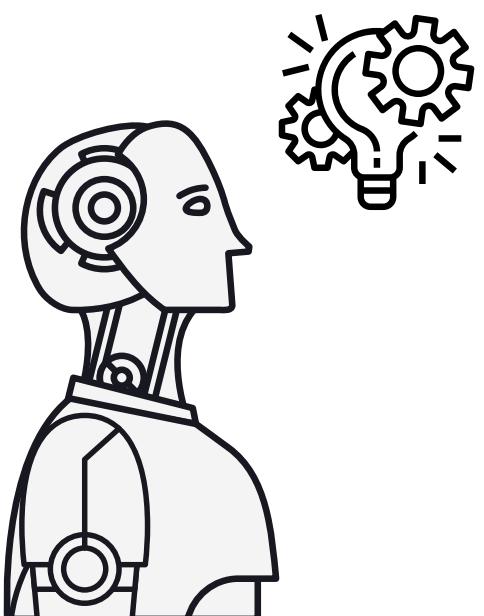
DEMO MVP



Advantages of MVP



Not only does this help customers better envision the right products for themselves when shopping online, but it also aids businesses in reducing return rates and increasing revenue.



Employing cutting-edge AI techniques and choosing suitable model, which is light but effective.

Future Works

Deploy the product for widespread accessibility and usage by everyone.

Integrate clothing recommendation feature based on user's application usage behavior.

Integrate a feature suggesting clothing sizes based on specific customer-provided measurements.

Analyze app usage metrics and customer feedback to enhance the product.

THANK YOU