SMART FASHION RECOMMENDER APPLICATION

PROJECT FINAL REPORT

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ABSTRACT

In recent years, with the huge amount of information and users of the internet service, it is hard to know quickly and accurately what the user wants. This phenomenon leads to an extremely low utilization of information, also known as the information overload problem. Traditionally, keywords are used to retrieve images, but such methods require a lot of annotations on the image data, which will lead to serious problems such as inconsistent, inaccurate, and incomplete descriptions, and a huge amount of work. To solve this problem, Content Based Information Retrieval (CBIR) has gradually become a research hotspot. CBIR retrieves picture objects based entirely on the content. The content of an image needs to be represented by features that represent its uniqueness. Basically, any picture object can be represented by its specific shapes, colors, and textures. This research designs and implements a two-stage deep learning-based model that recommends a clothing fashion style.These attributes are provided to the correspondence model to retrieve the contiguous related images for recommendaton.Based on data-driven, this thesis uses convolutional neural network as a visual extractor of image objects.

Recommendation systems are the techniques that are used to predict the rating one individual will give to an item or social entity.These preferences are being predicted using two approaches a content-based approach which involves characteristics of an item and second collaborative filtering approaches which consider the user's past behavior to evaluate its choices. This thesis proposes a fashion recommendation system which will recommend clothing images supporting the style sort of the provided clothing images. In this work, we focus on the images of upper body as well as the lower body clothing and with human models in the images. We have created our own datasets through web scraping of different ecommerce websites. In this paper we have come up with an idea to build a content-based recommendation system using ResNet-50 convolutional neural network.

Keywords: Cloth Recommendation, Convolutional Neural Network, Similarity Measure.

Introduction

During the last few years, online shopping has been growing. In 2013, the total turnover for ecommerce in Europe expanded with 17% in contrast to the 12 months before and huge organizations can have hundreds and hundreds of products or even more from which we can select on websites. Both the customer and the business enterprise desire the client to easily discover applicable products or items both throughout search and when they are searching, and this is where recommender systems come into the picture. The greater part (62%) of US buyers with Web access presently shop on-line, to some degree, at least a month, and 1% say they do not buy from the internet, as indicated by a current report by Walker Sands. From all the clients looking for items on the web, 63% of them buy garments (Burke, 2002), these being, quite possibly, the most purchased items.The Information revealed that women are more likely to buy on-line, with 71% of ladies doing this, contrasted with 52% of men. Studies on clothing are in a growing development in general as a result of the tremendous market related to dress. In China, the serviceable market crushed 20 billion US dollars in 2016. Picture recovery can be depicted as the errand of looking out for pics in a picture data set. This is not an astute thought, in light of everything. It has been explored on account of the way that the 1970s joined informational collection associations with PC vision, looking into the issue as indicated through two uncommon perspectives, the first being text-based and the second one being visual-based.

From the outset, the developments have been made only through information annotations that have been saved in a database to work the retrieval step, however, when the dimension of the image collections started to amplify the effort required to label them used to be as soon as unsustainable, to solve this issue, during the 1990s, content-based photograph retrieval was proposed. Starting now many searches for lines have seemed the use of one or the different isolated or combining them.

Recommendation systems make recommendations based on the information they are provided with and in the manner in which they are programmed. Going into details, most of the evaluation applied is independent coming up with a brand-new recommendation algorithm, system, or model. However, different researchers use already existing work as researchers use an already existing piece of work to come up with a new diagram or to truly improve the current one. The present analysis model focuses on the use of a current algorithmic program and, consequently, the use of a new research concept comes up with a recommender system. Existing research and fashions have given us some inspirations of how to design fashion recommendation systems. Nevertheless, they also involve some common drawbacks. Therefore, in this study, our aim is to suggest a new method to assist personal choice making through supplying images and get suggestions based on provided contents.

The contribution of the research are follows:

1. To design and implement a web-based clothing fashion style recommender system based on deep learning;

2. A scheme for improving a person's clothing style by removing the features he/she doesn'T like.

3. These attributes served to a similar model to retrieve similar images as recommendations.

4. Combined with more common content-based recommendation

systems, our model can help to extend robustness and performance.

Literature survey

Codevo-Matching Clothes Recommendation:

On selecting a particular item to buy, Myntra automatically suggests a full set of clothes that are matching to the selected item. For example, on selecting a particular t-shirt, the system automatically generates a combination of watches, shoes, pants, etc. that are matching to the selected t-shirt. This system does not take into consideration private qualities of customers like skin color and existing clothes. It will only suggest clothes that already exist in its database.

Your Closet:

This is a mobile application that organizes the closet. The user interface is shown in. The application asks customers to input their clothes. It then matches each cloth with other clothes. For example, if there are 4 shirts and 4 pants, the application matches each shirt with each pant and thus provides 16 possibilities.The application does not make matches of clothes depending upon patterns, color and texture of clothes. It also does not have a recommendation system.

Your Closet App Magic Closet:

This system aims to retrieve clothes from online stores that are matching to the input clothes. These clothes must be fit for a particular occasion. In this system, the user takes a photo of them specifying if they want to use the top or bottom clothes along with the

occasion they want to use it for. The system will search for clothing that matches the user query and satisfies the criterion of wearing aesthetically and wearing properly
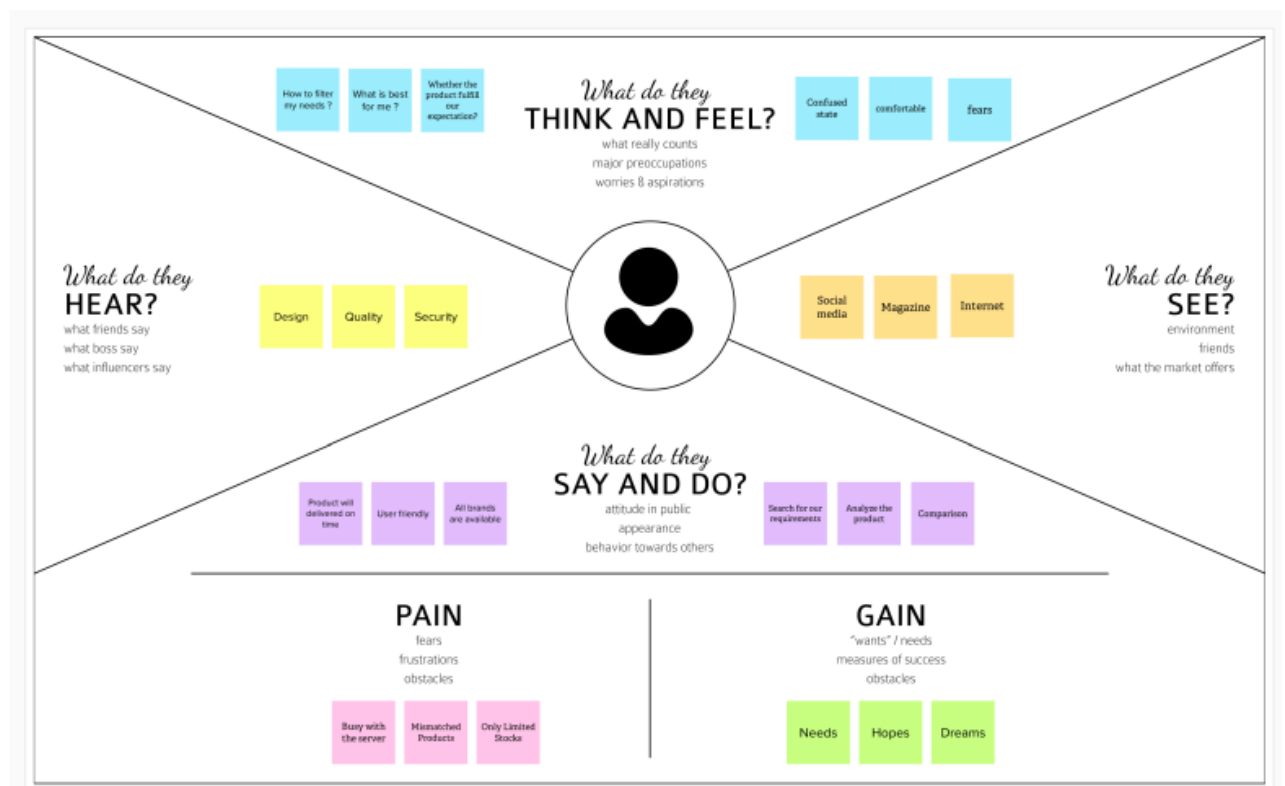
Personalized Clothing Recommendation Based on Knowledge Graph:

This system attempts to exploit the knowledge graph for providing clothing recommendations to the user keeping the user context in mind. The recommendation is done by calculating the similarity in the clothing ontology similar to users collection. Skin and Clothes matching seeded by Color SystemSelection: The main aim of the system is to suggest clothes to users based on skin color. The paper first finds out which color scheme is best suited to represent skin colors and then tries to find a way to recommend if clothes and skin color match. An automated system to determine the highest levels of color suitability between skin and clothing was made.

Discerning Advisor:

The system tries to recommend clothes based on the skin color of the customer. Using a neural network, first the skin color is detected. Fuzzy logic is used to map a skin color to the skin color of a fashion model, and clothes suited to that model are recommended. Garment Detectives: The garment detection is to detect the presence of clothes in images and somewhat locate their extents, where the localization can be defined from coarse (image) level to fine (pixel) level. A unified system is proposed for detecting and recognizing clothes in customer photos.

Empathy Map

What do they THINK AND FEEL?
what really counts
major preoccupations
worries 8 aspirations

- How to filter my needs ?
- What is best for me ?
- Whether the product fulfil our expectation?
- Confused state
- comfortable
- fears

What do they HEAR?
what friends say
what boss say
what influencers say

- Design
- Quality
- Security

What do they SEE?
environment
friends
what the market offers

- Social media
- Magazine
- Internet

What do they SAY AND DO?
attitude in public
appearance
behavior towards others

- Product will delivered on time
- User friendly
- All brands are available
- Search for our requirements
- Analyse the product
- Comparison

PAIN
fears
frustrations
obstacles

- Busy with the server
- Mismatched Products
- Only Limited Stocks

GAIN
"wants" / needs
measures of success
obstacles

- Needs
- Hopes
- Dreams

Proposed system architecture

The system architecture defines the hardware, software and network environment of the structure. The system will be web-based meaning that the users need to run the URL in order to run the system. The system will run both horizontally and vertically. The architecture used in the system is shown horizontally where the Model View Controller is explained as represented in Figure 1. The high-level part of the system is looked at using the vertical way.
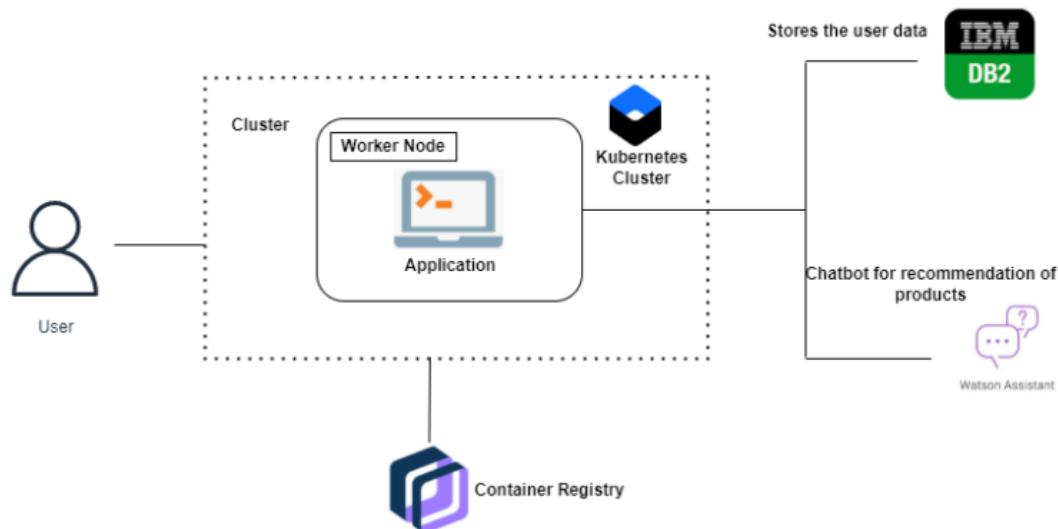

Figure 1. **System architecture.**

The system comprises the Client tre, which is the front end or View mode, middle term which is the system controller and the backend tre which is the model. The client side is where the users/customers log in in the system, browse for the system interface, provide input query images to the system, and get recommendations according to the input query. The middle truth is responsible for communication between the front end and the back end. It receives user requests and sends them to the back end and in turn accepts responses from the back end and sends them to the user.

The internet works to provide access to the site with a strong security check, provided by both firewall and password protection policy.Any unauthorized access is detected and prevented by the firewall.
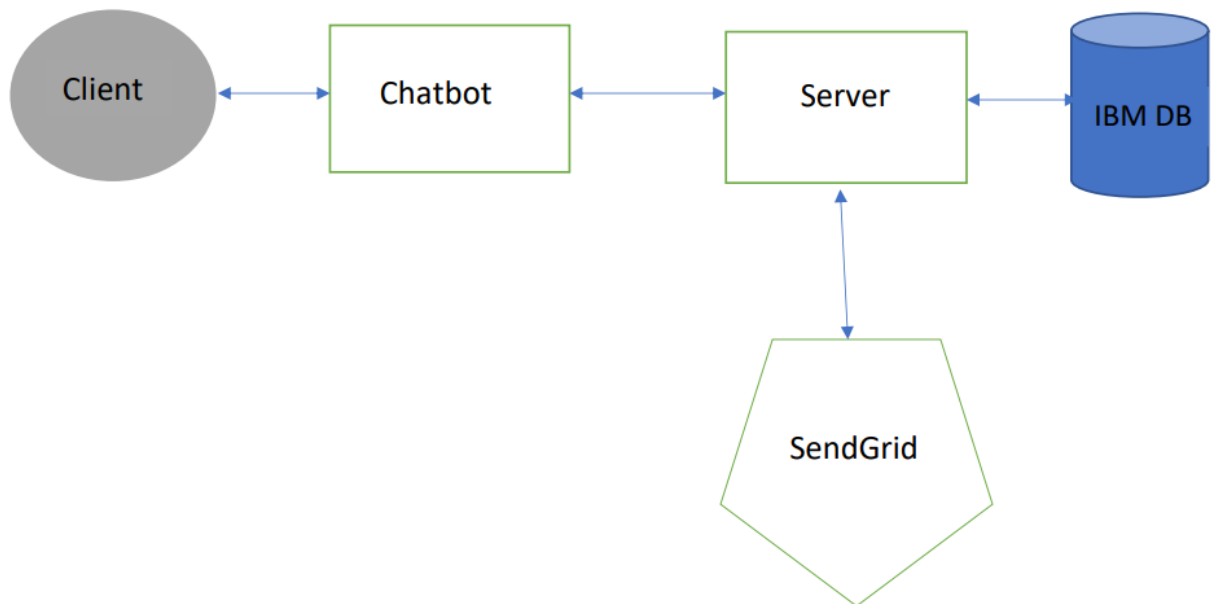
a. The vertical classification system model

The recommendation system works with the data set to track user input data features and extracted features from the data set upon which new predictions and recommendations are made. The recommendation browses the dataset for user data and available dataset features. Receives Recommendations User Web ServerSends response to user Database Stores User input data Stores dataset features.

Data Recommender Makes Recommendations Recommender Algorithm Determines the Similarity between Clothes Figure 2. Vertical architecture of the system.lt uses the algorithm to go over the input user data and determine similarities between users input data and stored dataset features. Finally, it makes recommendations. By looking at Figure 1 and Figure 2, we realize that the recommender system does not interact directly with the users at any point. When the repository stores data, the recommender filters the data it needs from the repository using the algorithm.

When a signal is sent to the algorithm about what data is needed for filtering, the algorithm computes the similarity. The similarity results are then transferred to the recommender system which in turn sends recommendations to the web server and finally to the respective user.

b. Dataset and classification

In this project, we worked with the Deep Fashion dataset, which is gathered from researchers from the Chinese Hong Kong University. It has over one million diverse trend pics and wealthy annotations with additional data about landmarks, categories, pairs etc. The dataset consists of 5 distinct types of predicting subsets that are tailor-made towards their tasks.

c. Design of deep learning module

There are many classification algorithms or classifiers in use today. The most notable and the most implemented classifiers and feature extractor are implemented to solve a problem of cloth / fashion recommendation Design process, (l)are weight vectors, are fully connected output layers that actually perform classification and are the CNN without the last layer. They are used as feature extractors.

Results and Evaluation

This section focuses on evaluating our system and deciding the stage at which it is able to fulfill the purpose for which it was created. The performance of the system is analyzed in detail through several tests, from small scale to large scale. Firstly, the unit tests are done at the lower stages and then we proceed to the whole test system. In the training implementation module, we are performing the movement throughout the area, freezing the base layers of the organization i.e., the VGG16 layers, and training the model on the dataset for 5 epochs. This trains the external layers to figure out how to characterize the pictures. We then unfreeze the lower layers and train the model for 5-7 epochs until the approval exactness settles. We keep the best achievable loads (best on approval exactness) and use it for the suggestion model. The training implementation code is presented below.

Step 1: Training the whole network for 5 epochs first

Step2:Checkpoint_callback=modelcheckpoint(,,, /model/vgg_weights_best_patern.hdf5".

Step.3 : Monitor="val_acc", verbose=0 save_best_only=true, save_weights_only=false, mode=auto", period=l)

Step 4: Tf_model.ft_generator(Train_generator, Samples_per_epoch=nb_train_sample, Nb_epoch=10, Validation data=validaton_generator,

Nb_val_samples=nb_validaton_samples, Verbose=l, Inital_epoch=5,

Callbacks=[checkpoint_callback]

Step 5 : end

1.Visual recommendation module implementation

To get proposals, we wished to construct a vault of pictures. This archive would be a unique application. If the suggestion was cultivated for shopping, the storehouse would have contained pictures from online retail locations like Amazon, eBay, Pinterest, Instagram, etc. A subset of pattern datasets was used to test our proposed approach. At that point, the information had already been cleared of unimportant photos. Then, the photos were passed by means of the organization and design vector pictures have been created from each photo. For getting the suggestion, we first needed to build the individual style profile. This is brought out by taking one or more noteworthy pictures of the client's ideal after things as they were entered and by making their style vector. These vectors are then blended to shape the framework of the individual style profile.

The proposed scheme is further below, as follows: we will utilize a closeness calculation, which and the design vector of each picture in the vault with the style profile grid. This gives us a score dependent on the quantity of component coordinates (i.e., how great is the degree of similarity of a picture to the individual's style profile).

Step 1: def similarity (feature_data, inp_ feature_data):

Step 2: nun_samp=inp_feature_data. size

Step 3: print (unm_samp) Sim_score = [] for i in range (1 en (feature_data)): score=0 **Step 4:** show_sample (data_images[ij)

Step 5: print (feature_data[ij) score _m = inp_feature_data - feature_data[i]

Step 6: print (Soore_ m) score= nun_samp-np. Count_nonzero (score_m) sim_score [i]=score

Step 7: print (score) sim Score

Step 8: end

i. User management services:

The system provides a platform through which a user can visit the system and provide his/her choices regarding the fashion images for best recommendation.

ii. Fashion vector for images in repository and input fashion vector:

The system is responsible for making fashion vectors for images in the repository and fashion vector images provided by the user to the system, for the similarity measures and for making recommendations. After making the fashion vector, some predictions are made, as illustrated The system is responsible for making recommendations to users based on their user data. The user data compiled in the dataset is filtered by the recommender system through the recommender algorithm.

Stepl:Def similarity (feature_data, inp_feature_data); Num_samp=inp_feature_data.size

Step2: print (num_samp) Sim_score = () For i in range (len (feature_data)); score = 0 show„sample (data_images[ij]) print(feature_data[i]) Romanian Journal of Information Technology and Automatic Control, Vol. 31, No. 4, 123-136, 2021 131 htp://www.rria.ici.ro

Step3: Score_m inp_feature_data-feature_data[i] print (score_m)

Step4 :Score=num_samp-np.count_nonzero(score_m) Sim_score[i]=score print(score)
Step 5: Return sim_score

Step 1: Similarities=similarity(feature_data,inp_feature_data)
step.2.items(),

key=operator.itemgetter(1),reverse=(true)

Num_reco=30

data=feature_data. size

For I in range(num_reco) Ind =

sorted_similarites[i] [0]

print (sorted_similarites)
Print ("score:", sorted_similartes[i][l])

Show_sample(data_images [ind])

Step 3: end

By accessing the system, users are able to access and view their content- based recommendations. However, all the recommendations are made based on the similarity between user inputs and user inputs. As long as there is a level of similarity, we make the best recommendations.

iv. Recommender to the query images in dataset:

We can see that our model can capture the best matching style by including the length, shape, color, fabric and pattern of the cloths, as illustrated in three query images examples. In the first example, the model captures deep features including the blouse category, fabric, repeated floral pattern and the regular ft style. As seen, the five recommended images display different clothes. The second example shows that the model captures the wool fabrics, the contrast color stretches and the turtleneck. The third example shows that the model can capture the cotton fabrics and the printed letters. Our model can capture the style with high accuracy, meaning that our system achieves its purpose. It can be noted that our system can perform for all the involved categories like pattern, style, fabric etc. The highest similarity score shows that the input images and the recommended ones are similar. This figure also illustrates that the system can work best for pattern recommendation and recommend top similar images in different colors, shapes, and styles.

v.Recommendations to the query images outside the dataset:

It"s natural to ask if the model you made works with images which are not part of the dataset. We randomly downloaded three online images illustrating expensive clothes.

The model is checked for different categories like pattern, style, fabric. The highest score shows that the image is more similar to the input query. So, our model obtains a high similarity score for different categories.

System Result and Accuracy

Finally, this subsection evaluates the system and shows the testing results and the accuracy of our model. After adding the model on top of the convolutional base, freezing the weights of all layers except of the top ones, and training the model for 5 epochs, the following accuracy was obtained.

After calculating the mean accuracy for 5 epochs, the obtained results are as follows:

Validation: accuracy = 0.836000; loss = 0.489109

This part of the sentence "After calculating the mean accuracy for 5 epochs" is mentioned also below, after Figure 10, and these values mentioned for accuracy and loss (0.836000 and 0.489109) are not illustrated.

After calculating the mean accuracy for 5 epochs, the final result is as follows:

Validation: accuracy = 0.864750; loss = 0.516400 These values mentioned for accuracy and loss (0.864750 and 0.516400) are not illustrated.

The accuracy of our model was compared with the one of Alex Net's model. It can be clearly noticed that our model gives a better accuracy when compared to Alex Net.

Recommender systems are still developing and, as extra research is being done, extra areas and weaknesses that need greater study are also developing. Recommender systems have proved to be a great solution to the overload of web data, an important problem affecting the users. With the ever-growing records and choices, recommender systems enable the customers to access the data they need within minutes, just by a mere mouse click or by a single keystroke. Table 2 shows the comparison with other models regarding the accuracy and the loss values.

Source Code

lndex.html:

```html
<!DOCTYPE html>

<html lang="en">
 <head>
  <meta charset="UTF-8" />
  <meta http-equiv="X-UA-Compatible" content="IE=edge" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0" />
  <!-- ====== Favicon ====== -->
  clink
    rel="shortcut icon"
    href="images/favicon-32x32.png"
    type="image/png"
  />
  <i- ====== Boxicons ====== -->
  <link
    href="https://unpkg.com/boxicons@2.0.9/css/boxicons.min.css"
    rel="stylesheet"
  />

  <!  ====== Swiper CSS ====== -->
  <link
    rel="stylesheet"
    href="https://unpkg.com/swiper/swiper-bundle.min.css"
  />
  <!_ ====== Custom CSS ====== ->
  clink rel="stylesheet" href="css/styles.css" />
  <title>Smart Fashion Recommender Application</title>
  cl- ====== ChatBot ====== -->
  <script>
    window.watsonAssistantChatOptions = {
      integrationlD: "ea99a004-2f6e-4482-90cf-a8b4715a60ad", // The ID of this integration, region:
      "us-south", // The region your integration is hosted in.
      servicelnstancelD: "045d009a-7a57-4bdd-9163-f626bc1 c750a", // The ID of your service instance.
      onLoad: function(instance) {instance.render();}
    };
    setTimeout(function(){
      const t=document.createElement('script');
      t.src="https://web-chat.global.assistant.watson.appdomain.doud/versions/" +
(window.watsonAssistantChatOptions.clientversion || 'latest') + "/WatsonAssistantChatEntry.js";
      document.head.appendChild(t);
    });
    c/script>
 c/head>
 cbody>
```

```html
<!_ ====== Header ====== -->
<header class="header">
  <!-- ====== Navigation ====== --> <nav class="navbar">
    <div class="row container d-flex"> <div class="logo">
      <img src="./images/logo.svg" alt-""/> </div>

    <div class="nav-list d-flex">
      <a href="">Home</a>
      <a href="">Shop</a>
      <a href="">Pages</a>
      <div class="close">
        <i class="bx bx-x"x/i>
      </div>
      <a class="user-link">Login</a>
    </div>

    <div class="icons d-flex">
      <div class="icon d-flex"><i class="bx bx-search"></i></div> <div class="icon user-icon d-flex">
      <i class="bx bx-user"></i>
      </div>
      <div class="icon d-flex">
      <i class="bx bx-bell"></i>
      <span></span>
      </div>
    </div>

    <!-- Hamburger -->
    <div class="hamburger">
      <i class="bx bx-menu-alt-right"x/j> </div>
    </div>
  </nav>

  <!-- ====== Hero Area ====== -->
  <div class="hero">
    <div class="row container d-flex">
      <div class="col">
      <span class="subtitle">Limited Time Only For Winter</span> <h1 >fash<span class="i">i</span>on</h1 > <p>LOOK YOUR BEST ON YOUR BEST DAY</p>

      <button class="btn">Explore Now!</button> </div>
      <img src="./images/woman-in-cart.png" alt="" />
    </div> </div> </header>

  <!-- ====== Collection ====== ->
  <section class-'section blog">
   <div class="title">
    <span>COLLECTION</span>
    <h2>OurTop Collection</h2>
```

```html
        </div>


    <div class="row container1^
     <div class="col">
       <a href="clothes.html" class="btn cart-btn">
       <div class="top">
       <img src="./images/blog-1 .png" alt-'" />
       </div>
       <div class="bottom">
       <div data-filter="Mens">
       <h3>Clothes</h3>
        <h4>
             Clothing Shop Online from trendy apparels for women,men & kids at best price. Select your
favourite Clothing from the Fashionable collection on Codevo.
          </h4>
          <span>January 2022</span>
          </div>
          </div>
        </a>
      </div>
      <div class="col">
       <a href="accessories.html" class="btn cart-btn">
       <div class="top">
       <img src="./images/blog-2.png" alt-'" />
       </div>
       <div class="bottom">
       <h3>Accessiories</h3>
        <h4>
            Accessiories Buy Fashion accessories for women & men online. Select your favourite
Clothing from the Fashionable collection on Codevo.
          </h4>
          <span>January 2022</span>
          </div>
        </a>
      </div>
      <div class="col">
       <a href="footwear.html" class="btn cart-btn">
       <div class="top">
        <img src="./images/blog-3.png" alt-'" />

        </div>
        <div class="bottom">
        <h3>Footwear</h3>
         <h4>
            Footwear Online shopping from latest Footwear collection for women,men & best
price. Select your favourite Clothing from the Fashionable collection on Codevo. </h4>
          <span>January 2022</span>
          </div>
```

```html
      </div>
    </a>
  </div>
</section>

<i- ====== New Arrival ====== -->
<section class-'section new-arrival">
  <div class="title">
    <span>NEW ARRIVAL</span>
    <h2>Latest Collection</h2>
  </div>

  <div class="row container1^
    <div class="col col-1">
      <img src="./images/poster-1.png" alt-'" />
      <h3>
        2022 Trends <br />
        Women's Smart Skirt
      </h3>
    </div>
    <div class="col col-2">
      <img src="./images/poster-2.png" alt-'" />
      <h3>
        2022 Trends <br />
        Women's Smart Skirt
      </h3>
    </div>
    <div class="col col-3">
      <img src="./images/poster-3.png" alt-'" />
      <h3>
        2022 Trends <br />
        Women's Smart Shirt <br />
        <span>Discover More:</span>
      </h3>
    </div>
  </div>
</section>

<!-- ====== Statistics ====== -->
<section class-'section statistics'^
  <div class="title">
    <span>STATS</span> <h2>Our Statistics</h2> </div>

  <div class="row container'^
    <div class="col">
      <div class="icon">
        <i class="bx bxs-check-square"></i>
      </div>
      <h3>Easy Order System</h3>
```

```html
        <p>Lorem Ispum is a placeholder text commomly used as a free text.</p> </div>
      <div class="col">
       <div class="icon">
        <i class="bx bxs-user"></i>
       </div>
       <h3>On Time Delievery</h3>
       <p>Lorem Ispum is a placeholder text commomly used as a free text.</p> </div>
      <div class="col">
       <div class="icon">
        <i class="bx bxs-dollar-circle"></i>
       </div>
       <h3>Money Back Gaurantee</h3>
       <p>Lorem Ispum is a placeholder text commomly used as a free text.</p> </div>
      <div class="col">
       <div class="icon">
        <i class="bx bxs-user"></i>
       </div>
       <h3>24/7 Customer Support</h3>
       <p>Lorem Ispum is a placeholder text commomly used as a free text.</p> </div>
    </div>
   </section>

    <!_ ====== Blogs ====== -> <section class-'section blog"> <div class="title">
     <span>Team</span> <h2>Workers</h2> </div>

    <div class="row container'^ <div class="col">
      <div class="top">

       <img src="./images/blog-3.png" alt-'" />
      </div>
      <div class="bottom">
      <h3>Aravind</h3>
       <p class="w3-opacity">CEO & Founder</p>
        <p>Manages and directs the company toward its primary goals and objectives. Oversees
employment decisions
        at the executive level of the company. Leads a team of executives to consider major decisions
including
        acquisitions, mergers, joint ventures, or large-scale expansion.</p>
      </div>
     </div>

     <div class="col">
      <div class="top">
       <img src="./images/blog-3.png" alt-'" />
      </div>
      <div class="bottom">
      <h3>Sanjai</h3>
       <p class="w3-opacity">Stylist</p>
        <p>Responsible    for   the   visual   style   and   images   in   magazines,   newspapers,   product
```

```html
packaging.Inspire and guide
          the vision
          of the design team, oversee the work of illustrators, graphic/visualdesigners, photographers,
and others
          who are
          engaged in artwork or layout design.</p>
        </div>
      </div>

      <div class="col">
        <div class="top">
          <img src="./images/blog-3.png" alt-'"/>
        </div>
        <div class="bottom">
          <h3>Madhan Prasad</h3>
          <p class="w3-opacity">Designer</p>
          <p>Plan, create and code internet sites and web pages, many of which combine text with
sounds, pictures,
          graphics
          and video clips.Responsible for creating the design and layout of a website or web pages.
          It and can mean working on a brand new website or updating an already existing
site.</p>
        </div>
      </div>

      <div class="col">
        <div class="top">
          <img src="./images/blog-3.png" alt-'" />
        </div>
        <div class="bottom">
          <h3>Balamurugan</h3>
          <p class="w3-opacity">Marketing Manager</p>
          <p>Conceptualize visuals based on requirements. Prepare rough drafts and present ideas.
Develop
          illustrations,
          logos and other designs using software or by hand. Use the appropriate colors and layouts for
each
          graphic.
          Work with copywriters and creative director to produce final design.</p> </div>
      </div>

      <div class="col">
        <div class="top">
          <img src="./images/blog-3.png" alt-'" />
        </div>
        <div class="bottom">
          <h3>Nithin Karthick</h3>
          <p class="w3-opacity">Testing Engineer</p>
          <p>The role of Test Engineers is to thoroughly check materials, procedures and mechanical or
```

electrical systems to ensure that customers get high-quality, functional products. They run tests on various components and features in order to identify and fix technical issues. Experienced Test Engineers might also be responsible for training and managing junior team members.,</p>
        </div>
      </div>
    </div>
  </section>


```html
<!_ ====== Footer ====== --> <footer class="footer">
  <div class="row container'^
   <div class="col">
    <div class='logo d-flex">
     <img src="./images/logo.svg" alt="logo" /> </div>
    <P>
    Lorem ispum is a placeholder text <br /> commonly used as a free text.
    </p>
    <div class='icons d-flex">
    <div class="icon d-flex">
     <i class="bx bxl-facebook"></i>
    </div>
    <div class='icon d-flex"><i class="bx bxl-twitter"></i></div> <div class='icon d-flex"><i class="bx bxl-instagram"></i></div> <div class="icon d-flex"><i class="bx bxl-youtube"></i></div> </div>
    <p class="color">
    Copyrights 2022 <br />
    @lamabdulqadeer01
    </p>
   </div>
   <div class="col">
    <div>
    <h4>Product</h4>
    <a href="">Download</a>
    <a href="">Pricing</a>
    <a href="">Locations</a>
    <a href="">Server</a>
    <a href="">Countries</a>
    <a href="">Blog</a>
    </div>
    <div>
    <h4>Category</h4>
    <a href="">Men</a>
    <a href="">Women</a>
    <a href="">Kids</a>
    <a href="">Best Seller</a>
    <a href="">New Arrivals</a>
    </div>
```

```html
        <div>
        <h4>My Account</h4>
        <a href="">My Account</a>
        <a href="">Discount</a>
        <a href="">Returns</a>
        <a href="">Order History</a>
        <a href="">Order Tracking</a>
      </div>
      <div>
        <h4>Contact Us</h4>
        <div class="d-flex">
         <div  class="icon"><i  class="bx  bxs-map"></i></div>  <span>Tiruchirappalli,  Tamilnadu,
    INDIA</span> </div>
        <div class="d-flex">
         <div class="icon"><i class="bx bxs-envelope"x/j></div>
         <span>minifashion@gmail.com</span>
      </div>
        <div class="d-flex">
         <div class="icon"><i class="bx bxs-phone"></i></div>
         <span>+456 789 789 001</span>
      </div>
      </div>
    </div>
  </div>
</div> </footer> <!_ ====== Login and Signup Form ====== -> <div class="user-form">
<div class="close-form d-flex"><i class="bx bx-x"></i></div> <div class="form-wrapper
container'^
  <div class="user login">
   <div class="img-box">
    <img src="./images/login.svg" alt-"" />
   </div>
   <div class="form-box">
    <div class="top">
     <P>
      Not a member?
      <span data-id="#ff0066">Register now</span>
     </p>
    </div>
    <form action="">
     <div class="form-control">
     <h2>Hello Again!</h2>
     <p>Welcome back you've been missed.</p> <input type="text" placeholder-'Enter Username"
     /> <div>
      <input type="password" placeholder="Password" /> <div class-'icon form-icon">
       <!-- <img src="./images/eye.svg" alt-"" /> --> </div>
     </div>
     <span>Recovery Password</span>
     <input type="Submit" value="Login" /> </div>
     <div class="form-control">
```

```html
      <p>Or continue with</p>
      <div class="icons">
        <div class="icon">
          <img src="./images/search.svg" alt="" /> </div>
        <div class="icon">
          <img src="./images/apple.svg" alt="" />
        </div>
        <div class="icon">
          <img src="./images/facebook.svg" alt="" />
        </div>
        <div class="icon">
          <img src="./images/github.svg" alt="" /> </div>
      </div>
    </div>
  </form>
 </div>
</div>

<!-- Register -->
<div class="user signup">
 <div class="form-box">
  <div class="top">
   <P>
    Already a member?
    <span data-id="#1a1aff">Login now</span>
   </p>
  </div>
  <form action="">
   <div class="form-control">
    <h2>Welcome Fashion!</h2>
    <p>It's good to have you.</p>
    <input type="email" placeholder="Enter Email" /> <div>
      <input type="password" placeholder="Password" /> <div class-'icon form-icon">
       <img src="./images/eye.svg" alt="" />
      </div>
     </div>
     <div>
      <input type="password" placeholder="Confirm Password" /> <div class-'icon form-icon">
       <img src="./images/eye.svg" alt="" />
      </div>
     </div>
     <input type="Submit" value-'Register" />
    </div>
    <div class="form-control">
     <p>Or continue with</p>
     <div class="icons">
      <div class="icon">
       <img src="./images/search.svg" alt="" />
```

```html
      </div>
      <div class="icon">
        <img src="./images/apple.svg" alt-'" />
      </div>
      <div class="icon">
        <img src="./images/facebook.svg" alt-'" /> </div>
      <div class="icon">
        <img src="./images/github.svg" alt="" />
      </div>
     </div>
     </div>
    </form>
   </div>
   <div class="img-box">
     <img src="./images/trial.svg" alt-'" />
   </div>
   </div>
   </div>
  </div>

  <!-- ====== SwiperJs ====== -->
  <script src="https://unpkg.com/swiper/swiper-bundle.min.js"></script>

  <!-- ====== Custom Script ====== ->
  <script src="./js/product.js"></script>
  <script src="./js/main.js"x/script>

 </body>
</html>
```

CSS Code :

```css
@charset "UTF-8";
/* ========== Google Fonts =========== */
@import
url("https://fonts.googleapis.com/css2?family=Roboto:wght@300;400;500;700&display=swap");
@import url("https://fonts.googleapis.com/css2?family=Aclonica&display=swap"); /* ==========
CSS Variables ========== */
:root {
  --primary-color: #ff5e3a;
  --default-color: #4f5665;
  --black-color: #000;
  --grey-color: #fOfOfO;
  --white-color: #fff;
  --lightpink: #ffcce0;
  --blue: #1a1aff;
  --custom: #1 a1 aff;
  --color: #4d4d4d;
```

```css
  --lightblue: #ccccff;
  --box-shadow-1: 0 5px 15px rgba(0, 0, 0, 0.1);
  --box-shadow-2: 0 5px 15px rgba(255, 94, 58, 0.2);
  --gradient: linear-gradient(to bottom, #fccb90, #ff9a9e); --btn-gradient: linear-gradient(to bottom,
#ff5151 50%, #ff5e3a);


*::after,
*::before {
 box-sizing: inherit;
 margin: 0;
 padding: 0;
 border: none;
 outline: none;
}

html {
 font-size: 62.5%;
 box-sizing: border-box;
}

body {
 font-family: "Roboto", sans-serif; font-size: 1,6rem;
 font-weight: 400;
 color: var(--black-color);
 background-color: var(--white-color); }


hl,
h2,
h3,
h4{
 color: var(--black-color);
 line-height: 1.2;
 font-weight: 500; }


a{
 text-decoration: none;
 color: inherit;

}

li{
 list-style-type: none;

}

section {
 padding: 5rem 0 5rem; overflow: hidden;
```

```css
}

p{
  line-height: 3rem;
}

img{
  max-width: 100%;
  height: auto;
}

/* ========== Custom Classes ========== */ .container {
  max-width: 120rem;
  padding: 0 3rem;
  margin: auto;
}

@media (min-width: 1600px) {
  .container {
    max-width: 160rem;
  }
}
@media (max-width: 567px) {
  .container {
    padding: 0 1 rem;
  }
}
.d-flex {
  display: flex;
  align-items: center;
}

/* ========== Header ========== */ .header {
  margin-bottom: 4rem;
}
.header .navbar {
  padding: 2.5rem 0;
  position: relative;
  z-index: 1;
}
.header .navbar .row {
  justify-content: space-between;
}
.header .navbar .row .nav-list a {
  display: inline-block;
  padding: 1rem;
  font-size: 1.7rem;
```

```css
  font-weight: 500;
  color: var(--black-color);
}
.header .navbar .row .nav-list a.user-link {
  display: none;
}
.header .navbar .row .nav-list a:not(:last-child) { margin-right: 0.5rem;
}
.header .navbar .row .nav-list a:hover {
  color: var(--primary-color);
}
.header .navbar .row .icons .icon {
  font-size: 2.2rem;
  padding: 0.5rem;
  color: var(--black-color);
  cursor: pointer;
  justify-content: center;
  position: relative;
}
.header .navbar .row .icons ,icon:not(:last-child) {
  margin-right: 3rem;
}
.header .navbar .row .icons .icon span {
  display: block;
  width: 1 rem;
  height: 1rem;
  background-color: var(--primary-color);
  border: 1 px solid var(--black-color);
  position: absolute;
  top: 0.3rem;
  right: 0.4rem;
  border-radius: 50%;
}
.header .navbar .row .icons ,icon:hover {
  background-color: #f4f4f4;
}
.header .hamburger,
.header .close {
  display: none;
}
@media (min-width: 1600px) {
  .header .header .navbar {
    padding: 4rem 0;
  }
}
@media (max-width: 768px) {
  .header .navbar .row .icons {
    display: none;
```

```css
  }
  .header .navbar .row .nav-list {
    position: fixed;
    top: 0;
    right: -100%;
    width: 100%;
    max-width: 35rem;
    height: 100%;
    background-color: var(--white-color);
    z-index: 1000;
    flex-direction: column;
    align-items: flex-start;
    padding: 4rem 1 rem;
    transition: 0.5s;
  }
  .header .navbar .row .nav-list a {
    font-size: 1,8rem;
  }
  .header .navbar .row .nav-list a:not(:last-child) { margin: 0 0 1rem 0;
  }
  .header .navbar .row .nav-list .close {
    display: block
    position: absolute;
    top: 2.5rem;
    right: 2.5rem;
    color: var(--black-color);
    font-size: 3rem;
  }
  .header .navbar .row .nav-list.show {
    right: 0;
  }
  .header .navbar .row .hamburger {
    display: block;
    font-size: 3rem;
    color: var(--black-color);
  }
}

/* ========== Hero Area ========== */ .header .hero {
  height: 80vh;
  margin: 0 3rem;
}
.header .hero .row {
  height: 100%;
  background: url("../images/bg.svg") center/cover no-repeat fixed; border-radius: 2rem;
  position: relative;
}
.header .hero .row .col {
```

```css
    margin-left: 5rem;
  }
  .header .hero .row .col .subtitle {
    display: block;
    font-size: 1,8rem;
    margin-bottom: 4rem;
  }
  .header .hero .row .col hi {
    font-family: "Aclonica", sans-serif;
    font-size: 13rem;
    line-height: 1;
  }
  .header .hero .row .col hi .i {
    color: var(--primary-color);
    position: relative;
  }
  .header .hero .row .col hi ,i:before {
    content: "i";
    position: absolute;
    color: var(--black-color);
  }
  .header .hero .row .col p {
    font-size: 2rem;
    margin-bottom: 6rem;
  }
  .header .hero .row .col .btn {
    display: inline-block;
    padding: 1.5rem 6rem;
    border-radius: 1 rem;
    color: var(--white-color);
    font-weight: 500;
    font-size: 1,8rem;
    background: var(--btn-gradient);
    box-shadow: var(--box-shadow-l);
  }
  .header .hero .row img {
    position: absolute;
    right: 0;
    bottom: 0;


@media (max-width: 1600px) { .header .hero .row img {
    width: 40rem;
  }
}
@media (max-width: 1200px) { .header .hero .row .col hi {
    font-size: 8rem;
```

```css
      }
    }
@media (max-width: 768px) { .header .hero .row .col { position: absolute; top: 10%;
      margin-left: 0;
    }
    .header .hero .row .col .subtitle { font-size: 1,6rem;
    }
    .header .hero .row .col hi {
      font-size: 7rem;
    }
    .header .hero .row .col p { font-size: 1,6rem;
    }
    .header .hero .row .col .btn {
      padding: 1,2rem 4rem;
    }
    .header .hero .row img {
      width: 40rem;
    }
  }
@media (max-width: 567px) { .header .hero {
      height: 100vh;
      margin: 0 1 rem;
    }
    .header .hero .row .col .subtitle { font-size: 1,6rem;
      margin-bottom: 1.5rem;
    }
    .header .hero .row .col hi {
      font-size: 7rem;
    }
    .header .hero .row .col p {
      font-size: 1,6rem;
      margin-bottom: 2rem;
    }
    .header .hero .row .col .btn { padding: 1.2rem 4rem;
    .header .hero .row img {
      width: 25rem;
    }
}
/* ========== Collection ========== */ .section .title {
  text-align: center;
  margin-bottom: 5rem;
}
.section .title span {
  display: inline-block;
  border-bottom: 3px solid var(--primary-color); padding-bottom: 0.5rem;
  margin-bottom: 2rem;
  position: relative;
```

```css
}
.section .title span::before {
  content:
  position: absolute;
  bottom: -0.7rem;
  right: 2rem;
  width: 1 rem;
  height: 1rem;
  border-radius: 50%;
  background-color: var(--primary-color);
}
.section .title h2 {
  font-size: 2.4rem;
}

.collection .filters {
  justify-content: center;
  margin-bottom: 7rem;
}
.collection .filters div {
  padding: 1.7rem 4rem;
  color: var(--default-color);
  font-size: 1.7rem;
  border-radius: 0.8rem;
  box-shadow: var(--box-shadow-l);
  cursor: pointer;
}
.collection .filters div:not(:last-child) {
  margin-right: 4rem;
}
.collection .filters div:hover,
.collection .filters div.active {
  background: var(--gradient);
  color: var(--white-color);
  box-shadow: var(--box-shadow-2);
}
.collection .products .swiper-wrapper {
  padding: 0 0 1.5rem;
}
.collection .products .product {
  border-radius: 2.5rem;
  box-shadow: var(--box-shadow-l);
  overflow: hidden;
}
.collection .products .product .top {
  background: var(--gradient);
  height: 30rem;
```

```css
  justify-content: center;
  position: relative;
}
.collection .products .product .top img {
  height: 25rem;
}
.collection .products .product .top .icon {
  position: absolute;
  top: 2rem;
  right: 2rem;
  width: 4rem;
  height: 4rem;
  background-color: var(--primary-color);
  color: var(--white-color);
  border-radius: 50%;
  font-size: 2.5rem;
  justify-content: center;
  cursor: pointer;
  opacity: 0;
  visibility: hidden;
  transition: 0.3s;
}
.collection .products .product ,top:hover .icon {
  opacity: 1 ;
  visibility: visible;
}
.collection .products .product .bottom {
  padding: 2.5rem 2rem;
}
.collection .products .product .bottom h4 {
  font-size: 1.8rem;
  width: 85%;
  height: 5rem;
  margin-bottom: 1.5rem;
}
.collection .products .product .bottom .d-flex {
  justify-content: space-between;
}
.collection .products .product .bottom .price {
  color: var(--white-color);
  background-color: var(--primary-color);
  border-radius: 1 rem;
  padding: 0.5rem 2rem;
}
.collection .products .product .bottom .rating {
```

```css
    color: var(--primary-color);
  }
.collection .products .product .bottom .rating i:not(:last-child) {
  margin-right: 0.3rem;
}
.collection .products .pagination {
  text-align: center;
  margin-top: 3rem;
}
.collection .products .pagination .swiper-pagination-bullet {
  background-color: var(--primary-color);
  height: 1rem;
  width: 1 rem;
}
.collection .products .pagination .swiper-pagination-bullet-active { width: 3rem;
  border-radius: 1.5rem;
}

@media (min-width: 1600px) {
  .collection .products .product .top {
    height: 35rem;
  }
}
@media (max-width: 768px) {
  .collection .filters {
    margin-bottom: 7rem;
  }
  .collection .filters div {
    padding: 1.2rem 2.5rem;
    font-size: 1,6rem;
  }
  .collection .filters div:not(:last-child) {
    margin-right: 2rem;
  }
}
@media (max-width: 567px) { .collection .filters {
    flex-wrap: wrap;
  }
  .collection .filters div {
    padding: 0.7rem 1rem; font-size: 1,5rem;
    margin-bottom: Irem;
  }
.collection .filters div:not(:last-child) { margin-right: 1 rem;
  }
}
/* ========== Arrivals ========== */ .new-arrival .row {
  display: grid;
```

```css
}
.new-arrival .row .col {
 position: relative;
 padding: 1rem;
}
.new-arrival .row .col img {
 width: 100%;
 height: 100%;
 object-fit: cover;
}
.new-arrival .row .col-1,
.new-arrival .row .col-2 {
 grid-column: 1;
}
.new-arrival .row .col-3 {
 grid-column: 2;
 grid-row: 1 / span 2;
}
.new-arrival .row .col h3 {
 position: absolute;
 bottom: 10%;
 left: 5%;
 color: var(--white-color);
 font-size: 2rem;
 line-height: 3.5rem;
}
.new-arrival .row .col h3 span {
 display: block;
 margin-top: 3rem;
}

@media (max-width: 967px) {
 .new-arrival .row .col h3 {
   font-size: 1,6rem;
   line-height: 2.5rem;
 }
}
@media (max-width: 768px) {
 .new-arrival .row {
   display: block;
 }
 .new-arrival .row .col h3 {
   bottom: 15%;
   font-size: 1,5rem;
   line-height: 2rem;
 }
} ................. /* ========== Categories Product ========== */ .categories .products {
 display: grid;
 grid-template-rows: repeat(auto-fit, minmax(30rem, 1 fr)); gap: 7rem 4rem;
```

```css
    padding-top: 4rem;
}
.categories .product {
  border-radius: 2.5rem;
  border: 1px solid rgba(144,144,144, 0.25);
  overflow: hidden;
  transition: 0.3s;
}
.categories .product .top {
  background: var(--grey-color);
  height: 30rem;
  justify-content: center;
  position: relative;
  transition: 0.3s;
}
.categories .product .top img {
  height: 23rem;
}
.categories .product .top .icon {
  position: absolute;
  top: 2rem;
  right: 2rem;
  width: 4rem;
  height: 4rem;
  background-color: var(--primary-color);
  color: var(--white-color);
  border-radius: 50%;
  font-size: 2.5rem;
  justify-content: center;

  cursor: pointer;

  opacity: 0;

  visibility: hidden;

  transition: 0.3s;
}
.categories .product .bottom {

  padding: 2.5rem 2rem;

  background-color: var(--white-color);
}
.categories .product .bottom h4 {

  font-size: 1.7rem;

  height: 5rem;

  transition: 0.3s;

}
.categories .product .bottom .d-flex {
  justify-content: space-between;
```

```css
}
.categories .product .bottom .d-flex:first-child {
 margin-bottom: 1.5rem;
 align-items: flex-start;
}
.categories .product .bottom .cart-btn {
 color: var(--white-color);
 background-color: var(--primary-color);
 border-radius: 1 rem;
 padding: 0.8rem Irem;
 white-space: nowrap;
 visibility: hidden;
 opacity: 0;
 transition: 0.3s;
}
.categories .product .bottom .price {
 color: #909090;
 font-weight: 500;
}
.categories .product .bottom .rating {
 color: var(--primary-color);
}
.categories .product .bottom .rating i:not(:last-child) {
 margin-right: 0.3rem;
}
.categories ,product:hover {
 border: none;
 transform: scale(1.1);
 box-shadow: var(--box-shadow-l);
}
.categories ,product:hover .top {
 background: var(--gradient);
}
.categories ,product:hover .top .icon {
 opacity: 1 ;
 visibility: visible;
}
.categories ,product:hover .cart-btn {
 visibility: visible;
 opacity: 1;
}
.categories .button {
```

```css
  justify-content: center;
  margin-top: 8rem;
}
.categories .button .btn {
  display: inline-block;
  padding: 1.5rem 6rem;
  border-radius: 1 rem;
  color: var(--white-color);
  font-weight: 500;
  font-size: 1.8rem;
  background: var(--btn-gradient);
  box-shadow: var(--box-shadow-l);
  cursor: pointer;
}

/* ========== statistics ========== */
.statistics {
  padding: 10rem 0 10rem;
  background: linear-gradient(
    to bottom,
    rgba(252, 203,144, 0.15),
    rgba(255,185,188, 0.1)
  );
}
.statistics .title {
  margin-bottom: 10rem;
}
.statistics .row {
  display: grid;
  grid-template-columns: repeat(auto-fit, minmax(25rem, 1 fr)); gap: 3rem;
}
.statistics .row .col {
  display: flex;
  align-items: center;
  flex-direction: column;
  text-align: center;
.statistics .row .col .icon {
  display: flex;
  align-items: center;
  justify-content: center;
  width: 11 rem;
  height: 11 rem;
  font-size: 4rem;
  background: var(--white-color);
  border-radius: 1 rem;
  box-shadow: var(--box-shadow-l);
```

```css
  color: var(--primary-color);
  margin-bottom: 6rem;
}
.statistics .row .col ,icon:hover {
  background-color: var(--primary-color);
  color: var(--white-color);
  box-shadow: var(--box-shadow-2);
}
.statistics .row .col h3 {
  margin-bottom: 1.2rem;
}
.statistics .row .col p {
  color: var(--default-color);
}

@media (max-width: 768px) {
  .statistics .row .col .icon {
    width: 8rem;
    height: 8rem;
    font-size: 3rem;
  }
  .statistics .row .col p {
    width: 80%;
    margin: 0 auto;
  }
}
/* ========== Blog ========== */
.blog .title {
  margin-bottom: 7rem;
}
.blog .row {
  display: grid;
  grid-template-columns: repeat(auto-fit, minmax(30rem, 1 fr));
  gap: 4rem;
}
.blog .row .col {
  border-radius: 2.5rem;
  overflow: hidden;
  box-shadow: var(--box-shadow-l);
}
```

```css
.blog .row .col .top {
 height: 45rem;
}
.blog .row .col .top img {
 height: 100%;
 object-fit: cover;
}
.blog .row .col .bottom {
 text-align: center;
 padding: 3rem 0;
}
.blog .row .col .bottom h3 {
 color: var(--primary-color);
 margin-bottom: 1 rem;
 font-size: 1.8rem;
}
.blog .row .col .bottom h4 {
 max-width: 50%;
 margin: 0 auto Irem;
 font-size: 1.5rem;
 line-height: 1.5;
}
.blog .row .col .bottom span {
 color: #909090;
 font-size: 1.5rem;
}

@media (max-width: 1600px) {
 .blog .row .col .top {
  height: 30rem;
 }
 .blog .row .col .bottom h4 {
  max-width: 85%;
 }
}
/* ========== Footer ========== */ .footer {
 background-color: rgba(252, 203,144, 0.15); padding: 10rem 3rem 10rem;
 margin-top: 7rem;
}
.footer .row {
 display: grid;
 grid-template-columns: 1 fr 2fr;
.footer .row .col .logo {
 margin-bottom: 2.5rem;
}
```

```css
.footer .row ,col:first-child p {
 margin-bottom: 2rem;
 color: #4f5665;
 font-size: 1.7rem;
}
.footer .row .col .icons {
 margin-bottom: 2rem;
}
.footer .row .col .icon {
 color: var(--white-color); justify-content: center;
 height: 4rem;
 width: 4rem;
 font-size: 2.5rem;
 border-radius: 50%;
 background-color: var(--primary-color); cursor: pointer;
}
.footer .row .col ,icon:not(:last-child) { margin-right: 1 rem;
}
.footer .row ,col:first-child .color {
 color: var(--primary-color); }
.footer .row ,col:last-child {
 display: grid;
 grid-template-columns: repeat(4,1 fr); }
.footer .row ,col:last-child div {
 display: flex;
 flex-direction: column;
}
.footer .row ,col:last-child div a {
 font-size: 1.7rem;
 padding: 0.5rem;
 margin-bottom: 1rem;
 color: #4f5665;
}
.footer .row ,col:last-child h4 {
 font-size: 2rem;
 font-weight: 500;
 margin-bottom: 2.5rem; }
.footer .row ,col:last-child .d-flex {
 flex-direction: row;
 margin-bottom: 2rem;
}
.footer .row ,col:last-child .d-flex .icon { display: flex;
 align-items: center;
 justify-content: center; font-size: 1.5rem;
 width: auto;
 height: auto;
 padding: 0.7rem;
```

```css
}
.footer .row ,col:last-child .d-flex span { font-size: 1.8rem;
  color: #4f5665;
}

@media (max-width: 1200px) {
  .footer ,col:first-child {
    display: none;
  }

  .footer .row {
    display: block;
  }
}
@media (max-width: 768px) {
  .footer .row ,col:last-child { grid-template-columns: 1 fr; gap: 3rem 0;
  }
}
/* ========== user Form =========== .icon img {
  width: 20px;
}

.user-form {
 position: fixed;
 top: 50%;
 left: 50%;
 min-height: lOOvh;
 width: 100%;
 background-color: var(--lightblue);
 display: flex;
 align-items: center;
 justify-content: center;
 transition: 0.5;
 z-index: 10000;
 transform: translate(-50%, -50%) scale(O); opacity: 0;
 visibility: hidden;
 transition: all 500ms ease-in-out;
 /* Functionality */
}
.user-form.active {
 background-color: var(--lightpink);
}
.user-form.show {
 transform: translate(-50%, -50%) scale(1);
 opacity: 1 ;
 visibility: visible;
}
.user-form .close-form {
 position: absolute;
```

```css
      top: 10%;
      right: 10%;
     background-color: var(--white-color); color: var(--custom);
     justify-content: center;
     border-radius: 50%;
     padding: 1rem;
     font-size: 2.3rem;
     cursor: pointer;
    }
    .user-form .container {
     position: relative;
     width: 900px;
     height: 500px;
     background-color: white;
     box-shadow: 0 10px 40px rgba(0, 0, 0, 0.2); overflow: hidden;
    }
    .user-form .user {
     position: absolute;
     top: 0;
     left: 0;
     width: 100%;
     height: 100%;
     display: flex;
    }
    .user-form .img-box {
     position: relative;
     width: 50%;
     height: 100%;
     transition: all 500ms ease-in-out;
    .user-form .img-box img {
     object-fit: cover;
     position: absolute;
     top: 0;
     left: 0;
     height: 100%;
    }
    .user-form .form-box {
     position: relative;
     width: 50%;
     height: 100%;
     background-color: white;
     transition: 500ms ease-in-out;
    }
    .user-form .form-box .top {
     position: absolute;
     top: 14px;
     right: 14px;
    }
```

```css
.user-form .form-box .top p {
 font-size: 13px;
}
.user-form .form-box .top span {
 color: var(--custom);
 cursor: pointer;
}
.user-form form {
 position: absolute;
 top: 55%;
 left: 50%;
 width: 100%;
 max-width: 300px;
 transform: translate(-50%, -50%);
 display: flex;
 flex-direction: column;
 justify-content: space-between;
}
.user-form form ,form-control:first-child { text-align: center;
}
.user-form form ,form-control:first-child input { font-family: "Poppins", sans-serif;
 border-radius: 5px;
 border: 1 px solid #ddd;
 padding: 10px 0;
 margin-bottom: 10px;
 text-indent: 16px;
 width: 100%;
 color: var(--color);
 outline: none;
}
.user-form form ,form-control:first-child input[type="submit"] {
 display: block;
 text-align: center;
 width: 100%;
 border: none;
 outline: none;
 cursor: pointer;
 background-color: var(--custom);
 color: white;
 transition: 0.5s;
}
.user-form form ,form-control:first-child input[type="submit"]:hover { background-color: var(--
 lightblue);
}
.user-form form ,form-control:first-child h2 {
 width: 100%;
 font-weight: 400;
 font-size: 26px;
```

```css
}
.user-form form ,form-control:first-child p {
 font-size: 15px;
 margin-bottom: 20px;
}
.user-form form ,form-control:first-child span {
 font-size: 13px;
 display: block;
 text-align: right;
 margin-bottom: 20px;
}
.user-form form ,form-control:first-child div {
 position: relative;
}
.user-form form ,form-control:first-child .icon {
 position: absolute;
 top: 50%;
 transform: translateY(-50%);
 right: 1rem;
 cursor: pointer;
}
.user-form form ,form-control:last-child {
 text-align: center;
}
.user-form form ,form-control:last-child p {
 position: relative;
 display: inline-block;
 font-size: 14px;
}
.user-form form ,form-control:last-child p::after{
 content:
 position: absolute;
 right: -50px;
 top: 50%;
 transform: translateY(-50%);
 width: 40px;
 height: 2px;
 background-color: #ddd;
}
.user-form form ,form-control:last-child p::before {
 content:"";
 position: absolute;
 left: -50px;
 top: 50%;
 transform: translateY(-50%);
 width: 40px;
 height: 2px;
```

```css
  background-color: #ddd;
}
.user-form form ,form-control:last-child .icons {
  display: flex;
  align-items: center;
  justify-content: center;
  margin-top: 20px;
}
.user-form form ,form-control:last-child .icons .icon {
  cursor: pointer;
}
.user-form form ,form-control:last-child .icons ,icon:not(:last-child) { margin-right: 15px;
}
.user-form .container .signup {
  pointer-events: none;
}
.user-form .container .signup .form-box {
  top: 100%;
}
.user-form .container .signup .img-box {
  top: -100%;
}
.user-form .container.active .signup {
  pointer-events: initial;
}
.user-form .container.active .signup .form-box {
  top: 0;
}
.user-form .container.active .signup .img-box { top: 0;
}
.user-form .container .login .form-box {
  top: 0;
}
.user-form .container .login .img-box {
  top: 0;
}
.user-form .container.active .login .form-box {
  top: 100%;
}
.user-form .container.active .login .img-box {
  top: -100%;
}

@media (max-width: 996px) {
  .user-form .container {
    max-width: 400px;
  }
```

```css
  .user-form .container .img-box {
    display: none;
  }
  .user-form .container .form-box {
    width: 100%;
  }
  .user-form .container.active .login .form-box {
    top: -100%;
  }
}
@media (max-width: 567px) {
  .header .navbar .row .nav-list a.user-link {
    display: block;
  }

  .user-form {
    padding: 0;
  }
  .user-form .close-form {
    top: 10px;
    right: lOpx;
    padding: 0.7rem;
    font-size: 2.3rem;
  }
}
/*# sourceMappingURL=styles.css.map */
```

Javascript:

```javascript
/* ========== Navigation ========== */
const navList = document.querySelectorf'.nav-list");

document.querySelector(". hamburger"), onclick = ()=>{
 navList.classList.addf'show");
};

document.querySelectorf'. close"), onclick = ()=>{
 navList.classl_ist.remove("show");
};

/* ========== user Form ========== */ const formWrapper = document.querySelectorf'.form-
wrapper"); const inputs = document.querySelectorAII(".form-box input[type = 'password']"); const
icons = [...document.querySelectorAllf'.form-icon")]; const spans =
[...document.querySelectorAllf'.form-box .top span")]; const userForm =
document.querySelectorf'.user-form");
```

```javascript
[".user-icon", ",user-link"].forEach((p) => {
  document.querySelector(p). onclick = ()=>{
    userForm.classList.addf'show");
```

```javascript
      navList.classList.removef'show");
    };
  });

  document.querySelectorf'.close-form").onclick = ()=>{
    userForm.classList.removef'show");
  };

  spans.map((span) => {
    span.addEventListenerf'click", (e) => {
      const color = e.target.dataset.id;
      formWrapper.classList.toggle( "active");
      userForm.classList.togglef'active");
      document.querySelector(":root").style.setProperty("--custom", color);
    });
  });

  Array.from(inputs).map((input) => {
    icons.map((icon) => {
      icon.innerHTML = '<img src="./images/eye.svg" alt-'" />';

      icon.addEventListenerf'click", () => {
        const type = input.getAttributef'type");

        if (type === "password") {
          input.setAttribute("type", "text");
          icon.innerHTML = '<img src="./images/hide.svg" alt="" />'; } else if (type === "text") {
          input.setAttribute("type", "password");
          icon.innerHTML = '<img src="./images/eye.svg" alt-'" />'; }
      });
    });
  »;
```

```javascript
/*
Products Slider
*/
```

```javascript
const swiper = new Swiper('.mySwiper', { grabCursor: true,
slidesPerView: 1, spaceBetween: 70, pagination: {
  el: '.custom-pagination',
  clickable: true,
}, breakpoints: {
  567: {
    slidesPerView: 2,
```

```javascript
    },
    996: {
      slidesPerView: 3,
    }, },
});

/* ========== Fetch the Products

const getProducts = async () => {
try {
    const results = await fetch('./data/products.json');
    const data = await results.json();
    const products = data.products;
    return products;
} catch (err) {
    console.log(err);

}
};

const ProductsWrapper = document.getElementByld('products');

window.addEventListener('DOMContentLoaded', async function () { let products = await getProducts();
products = products.filter((product) => product.category === 'Dresses');
   products = products.filter((product) => product.category === 'Accessories'); products =
products.filter((product) => product.category === 'Footwear'); displayProductItems(products);
loadData();
});

/* ========== Display Products ========== */
const displayProductItems = (items) => {
let displayProduct = items.map(
   (product) =>'
          <div class="swiper-slide">
        <div class="product">
         <div class="top d-flex">
          <img src=${product.url} alt-'" />
          <divclass-'icon d-flex">
              <i class="bx bxs-heart"></i>
           </div>
         </div>
         <div class="bottom">
          <h4>${product.title}</h4>
          <div class="d-flex">
           <div class="price">$${product.price}</div>
           <div class="rating">
            <i class="bx bxs-star"></i>
            <i class="bx bxs-star"></i>
```

```
                <i class="bx bxs-star"></i>
                <i class="bx bxs-star"></i>
                <i class="bx bxs-star"></i>
              </div>
            </div>
          </div>
        </div>
      </div>

);

displayProduct = displayProduct.joinf');
ProductsWrapper.innerHTML = displayProduct;
};

/* ========== Filter Products ========== */
const filters = [...document.querySelectorAII('.filters div)];

filters.forEach((filter) => {
filters[2].classList.add('active');
filter.addEventListener('click', async (e) => {
  const id = e.target.getAttribute('data-filter');
  const target = e.target;
  const products = await getProducts();
  filters.forEach((btn) => {
    btn.classList.remove('active');
  });
  target.classList.add('active');

  let menuCategory = products.filter((product) => {
    if (product.category === id) {
      return product;
    }
  });

  displayProductltems(menuCategory);
  swiper.update();
});
});

/* ========== Categories Products ========== */

const categoriesProducts = document.querySelector('.categories .products'); const loadmore =
document.querySelector('.loadmore');

let currentindex = 0;
async function loadData() {
let maxResult = 8;
let products = await getProducts();
```

```javascript
if (currentindex >= products.length) {
  loadmore.disabled = true;
  loadmore.innerText = 'No More Products';
  return;
}

for (var i = 0; i < maxResult; i++) {
  const product = productsfi + currentindex];
  categoriesProducts.insertAdjacentHTML(
    'beforeend',
    '<div class="product">
      <div class="top d-flex">
        <img src=${product.url} alt-'" />
        <div class-'icon d-flex">
          <i class="bx bxs-heart"></i>
        </div>
      </div>
      <div class="bottom">
        <div class="d-flex">
          <h4>${product.title}</h4>
          <a href-'" class="btn cart-btn">Add to Cart</a>
        </div>

        <div class="d-flex">
          <div class="price">$$${product.price}</div> <div class="rating"> <i class="bx bxs-star"></i> <i
          class="bx bxs-star"></i> <i class="bx bxs-star"></i> <i class="bx bxs-star"></i> <i class="bx bxs-
          star"></i> </div>
        </div>
      </div>
    </div>'
  );
}

currentindex += maxResult;
}

loadmore.addEventListenerfclick1, loadData);
```

Python Code:

```python
import wiotp.sdk.device
import time
# Provide your IBM Watson Device Credentials
myConfig = { "identity": { "orgld": "ie9ki3",
                           "typeld": "mydevice",
                           "deviceld":"mydeviceid"},
            "auth": { "token": "bW(_2O((aRG8E6fij6"}}

def myCommandCallback(cmd):
    print("Message received from IBM loT Platform: %s" % cmd.dataf'command']) m =
    cmd.dataf'command']
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None) client.connect()

def pub(data):
    client.publishEvent(eventld="status", msgFormat="json", data=myData, qos=0, onPublish=None)
    printf'Published data Successfully: %s", myData)

while True:

    ######___TRAIN ROUTE FROM__MUMBAI ---> CHENNAI_######

    myData = {'name': 'BALA', 'PASSWORD': 12234}
    pub(myData)
    time.sleep(3)
```

```python
        myData = {'name': 'aravind', 'PASSWORD': 12234} pub(myData)
        time.sleep(3)
        myData = {'name': 'sanjay', 'PASSWORD': 12234} pub(myData)
        time.sleep(3)
        break
    client. disconnect()
```

DISCUSSION

This scholarly article has provided a comprehensive review of the methods, algorithmic models and filtering techniques used in the recent fashion recommendation based research papers. However, this review paper has some limitations too. Primarily, the focus of this comprehensive review paper was to explore fashion recommendation-based articles published in last decade that

explicitly described their frameworks, algorithms, and filtering techniques. To achieve this goal, the articles were searched using keywords relevant to the topic title instead of using the PRISMA technique. However, it did not affect the article extraction methodology, because the authors included and studied all the research papers relevant to the research focus. However, future researchers should conduct a systematic literature review on the same topic. The initial keyword searching did not include "garment" and "outfit"; however, this did not influence the search results because we also studied the fashion recommendation articles that contained these keywords. The future research can also conduct a review of the datasets that have been used in fashion recommendation-based research articles. Additionally, further reviews of fashion recommendation systems can apply our proposed potential algorithms to any of the available fashion image datasets to evaluate the performance of the recommender systems.

CONCLUSION

Recommendation systems have the potential to explore new opportunities for retailers by enabling them to provide customized recommendations to consumers based on information retrieved from the Internet. They help consumers to instantly find the products and services that closely match with their choices. Moreoverdifferent state-of-the-art algorithms have been developed to recommend products based on users" interactions with their social groups. Therefore, research on embedding social media images within fashion recommendation systems have gained huge popularity in recent times. This paper presented a review of the fashion recommendation systems, algorithmic models and filtering techniques based on the academic articles related to this topic. The technical aspects, strengths and weaknesses of the filtering techniques have been discussed elaborately, which will help future researchers gain an in- depth understanding of fashion recommender systems. However, the proposed prototypes should be tested in commercial applications to understand their feasibility and accuracy in the retail market, because inaccurate recommendations can produce a negative impact on a customer. Moreover, future research should concentrate on including time series analysis and accurate categorization of product images based on the variation in color, trend and clothing style in order to develop an effective recommendation system.

FUTURE SCOPE

Online selling and purchasing offer innumerable benefits to both sellers and buyers, and these advantages are also the reasons for the rising scope of eCommerceWell, to put it bluntly, the scope of e-business in the near future looks to be ever-increasing and growing, because the trend has really caught on here. E-commerce giant Amazon is keen to conquer the Indian market and has already invested a great deal, especially with its 49% stake in the Future Group.

Indian online retail giant Flipkart has already opened a few offline stores and plans more stores in smaller cities. They plan to combine online and offline stores to maximize their selling potental.Google and Tata Trust have launched a joint program „Saathi" to increase internet and mobile penetration among rural women.The Government of India is also making a huge push for Ecommerce by providing numerous sops to startups, cyberparks, and so on through its Digital India program.As of now, there are close to 20,000 E-commerce companies in India, with many more expected to join the bandwagon every month.

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