BJIT Ltd

Weekly Report

Fashion Recommender System

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Project Goal

The goal of this project is to develop a **Fashion Recommender System** that recommends fashion items that are similar to given or selected one. This system will function calculating image similarity ranking.
A customer may upload an image of a fashion item or the image might be selected from an image database, then the recommender system will calculate the similarity ranking and predict some similar fashion items based on similarity ranking.
The image dataset will have metadata for the images. This metadata includes the information of gender, age category(men/women/girls/boys), item category, season, year etc of a certain fashion item. We will include these metadata of a fashion item image to filter age, gender, season etc based fashion that are complex(Not possible) to get from image alone. It will help us to avoid age and gender related major issues(mistakes) to make the system more accurate.
We will apply Machine learning based cosine similarity models to find similarity(on metadata) among fashion items first. It will help us to filter out items based on age, gender etc.
Then we will use a Deep learning CNN model to extract features of fashion item images. Here we will apply cosine similarity on extracted features to get image similarity ranking and will use a triplet of images to get image similarity. There will be the given image, the positive(most similar) image and the negative(most dissimilar) image, from these three images our model will find the most similar images for recommendation.
We may also use NLP to get the current Fashion trends from Social media like twitter and apply them for more accurate, specific, trendy and personalized recommendations. We may deploy humans(Stylists) to do it.

Goal of This Week

1. Business understanding
2. Data understanding
3. Exploring data to get business goal

Accomplishments

- Studied transfer learning in tensorflow and learned Google Colab
    - Transfer learning with a pre trained ConvNet

- Studied some existing implementation and research of image-similarity ranking
    - Compare two image
    - Image similarity using deep ranking(1)
    - Image similarity using deep ranking(2)
    - Building a recommendation using CNN
    - Fashion Image Retrieval and Label Prediction
    - An Enriched Social Image Dataset for Fashion and Clothing

Time Table

Engineer	Task	Duration(hrs)	Total(hrs)
Shohag Mia	Transfer learning with TensorFlow	8	20
	Image similarity with deep ranking	4	
	Building recommender with CNN	8	
Muttakin	Google Colab	4	32
	Research paper	8	
	DeepFashion dataset	4	
	Recommender engine with CNN	8	
	Visual image similarity articles	8	

Plans for Next Week

1. Business understanding
2. Data understanding
3. Tracking current fashion trends from social media using NLP.
4. Repeat the process to meet the business goal the most

Project Status

Green

Note -

- Green means project is on schedule and there are no major issues
- Yellow means the project is somewhat delayed and/or there may be some major risks at the current point
- Red means the project is seriously at risk of being delayed and/or there are some major risks affecting the project

Project Timeline(Business & Data understanding)

Tasks	Sub-tasks	Week-1	Week-2	Week-3	Week-4	Week-5
Business Understanding	Determining business objectives					
	Assessing situation					
	Determining project goals					
	Producing project plan					
Data Understanding	Collecting initial data					
	Describing data					
	Exploring data					
	Verifying data					

Query

None

Key Issues, Risks or Concerns

Item	Action/Resolution	Responsible	Completion Date
GPU requirement	Needs GPU to explore potential models	Javed Hasan	