

Ideation Phase

Literature Survey

Date	15 October 2022
Team ID	PNT2022TMID18407
Project name	Smart Fashion Recommendation System
Maximum marks	4 marks

1.Title: An Intelligent Personalized Fashion Recommendation System

Publisher :IEEE

Year:2019

Authors: Cristiana Stan et.al

Abstract: Creating an outfit is a problem that is based on the preferences of each person and it can be difficult even for the best experts. This paper presents an automated system that can recommend a full outfit based on a cloth item considering also user's preference. Two convolutional neural networks based on the AlexNet model are used to identify cloth items and attributes associated with each item. After that, two types of scores are used in order to evaluate the user's preference for combination of different items, that are continuously updated in order to obtain recommendations that are more suitable for each user.

Inference: This paper presents an automated system that can recommend a full outfit based on a cloth item considering also user's preference and to identify cloth items and attributes associated with each item.

2.Title: Explainable Outfit Recommendation with Joint Outfit Matching and Comment Generation

Publisher: IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING

Year:2020

Authors: Yujie Lin et.al

Abstract: Most previous work on outfit recommendation focuses on designing visual features to enhance recommendations. Existing work neglects user comments of fashion items, which have been proven to be effective in generating explanations along with better recommendation results. This paper propose a novel neural network framework, neural outfit recommendation (NOR), that simultaneously provides outfit recommendations and generates abstractive comments. Neural outfit recommendation (NOR) consists of two parts: outfit matching and comment generation. For outfit matching, they propose a convolutional neural network with a mutual attention mechanism to extract visual features. The visual features are then decoded into a rating score for the matching prediction. For abstractive comment generation, we propose a gated recurrent neural network with a cross-modality attention mechanism to transform visual features into a concise sentence. The two parts are jointly trained based on a multi-task learning framework in an end-to-end back-propagation

paradigm. Extensive experiments conducted on an existing dataset and a collected real-world dataset show NOR achieves significant improvements over state-of-the-art baselines for outfit recommendation. Meanwhile, our generated comments achieve impressive ROUGE and BLEU scores in comparison to human-written comments. The generated comments can be regarded as explanations for the recommendation results. We release the dataset and code to facilitate future research.

Inference: This paper proposed a deep learning-based framework, called NOR, which simultaneously gives outfit recommendations and generates abstractive comments as explanations. We have released a large real-world dataset, ExpFashion, including images, contextual metadata of items, and user comments.

3)Title: A Conversation-Driven Approach for Chatbot Management

Publisher: IEEE

Year:2021

Author: Guilherme Guy de Andrade et.al

Abstract: Managing and evolving a chatbot's content is a laborious process and there is still a lack of standardization. In this context of standardization, the absence of a management process can lead to bad user experiences with a chatbot. This work proposes the Chatbot Management Process, a methodology for content management on chatbot systems. The proposed methodology is based on the experiences acquired with the development of Evatalk, the chatbot for the Brazilian Virtual School of Government. The focus of this methodology is to evolve the chatbot content through the analysis of user interactions, allowing a cyclic and human-supervised process. We divided the proposed methodology into three distinct phases, namely, manage, build, and analyze. Moreover, the proposed methodology presents a clear definition of the roles of the chatbot team. They validate the proposed methodology along with the creation of the Evatalk chatbot, whose amount of interactions was of 22,771 for the 1,698,957 enrolled attendees in the Brazillian Virtual School of Government in 2020. The application of the methodology on Evatalk's chatbot brought positive results: we reduced the chatbot's human hand-off rate from 44.43% to 30.16%, the chatbot's knowledge base examples increased by 160% whilst maintaining a high percentage of confidence in its responses and keeping the user satisfaction collected in conversations stable.

Inference: Managing and evolving a chatbot's content is a laborious process and there is still a lack of standardization. This work proposes the Chatbot Management Process, a methodology for content management on chatbot systems

4)Title: Color Navigation by Qualitative Attributes for Fashion Recommendation

Publisher: IEEE

Year:2018

Authors: Yeongnam Chae, Jiu Xu, Bjorn Stenger and Soh Masuko

Abstract: This paper proposes a novel method to navigate a color palette using attributes recognized from speech input. Our target application is a fashion recommender system for mobile e-commerce. Starting with a selected color, a user can request to show items of a

different color by qualitative attributes (e.g. ‘a little cuter’). These attributes are mapped to a query vector within the Lab color space in order to select the next color. The system distinguishes 85 attributes, each with three different possible magnitudes. This color navigation by speech was demonstrated in a mobile fashion recommender system. The proposed model is validated in a user study with 196 subjects.

Inference: This paper proposed a novel method to navigate a color palette via an attribute-based query. By interpolating the path between input color and target color in polar coordinates, the attribute-based query is converted to a query vector in the Lab color space.

5)Title: Recommending Outfits from Personal Closet

Publisher: IEEE

Year:2018

Authors: Pongsate Tangseng, Kota Yamaguchi, and Takayuki Okatani

Abstract: In this paper, they consider grading a fashion outfit for recommendation, where we assume that users have a closet of items and we aim at producing a score for an arbitrary combination of items in the closet. The challenge in outfit grading is that the input to the system is a bag of item pictures that are unordered and vary in size. They build a deep neural network-based system that can take variable-length items and predict a score. They collect a large number of outfits from a popular fashion sharing website, Polyvore, and evaluate the performance of our grading system. They compare our model with a random-choice baseline, both on the traditional classification evaluation and on people’s judgment using a crowdsourcing platform. With over 84% in classification accuracy and 91% matching ratio to human annotators, their model can reliably grade the quality of an outfit. They also build an outfit recommender on top of their grader to demonstrate the practical application of their model for a personal closet assistant

Inference: In this paper, they study outfits as combinations of items by developing outfit graders and outfit recommenders. Given a combination of items as an outfit, their best model can judge if the outfit looks good or not at over 84% accuracy on testing samples, and at 91% matching ratio on evaluations by human annotators.