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Mining Fashion Outfit Composition Using Deep Learning

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ABSTRACT

Fashion sense is a much more subtle and sophisticated subject, which requires domain expertise in outfit composition. To find a good outfit composition, we need not only follow the appropriate dressing codes but also be creative in balancing the contrast in colors and styles. Deep understanding of fashion standards while in corporating creativity for choosing multiple fashion items.(e.g. Jewelry, Bag, Pants, Dress, Shooes)

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I. INTRODUCTION

Online shopping also called as e-tail is a way of purchasing products over internet. It allows customers to buy goods or services using web browsers and by filling credit or debit card information. Fashion sense is a much more subtle and sophisticated subject , which requires domain expertise in outfit composition. Fashion style tells a lot about the subject's interests and personality. It has evolved day by day from the past few decades and has grained a considerable amount of attention. Now a-days online shopping is day-by-day increase. Shopping is one of the essential part of our daily life. The internet shopping world is an example of knowledge engineering. Online shopping is also known as e-commerce. To find a good outfit composition , we need not only follow the appropriate dressing codes but also be creative in balancing the contrast in colors and styles. Therefore this paper shows the nontrivial nature of fashion outfits involves deep understanding of fashion standards while incorporating creativity for choosing multiple fashion items (e.g.,Jewelry, Bag, Pants, Dress, shooes). We propose a machine learning system to compose fashion outfits automatically. We can shopping something at home in 24/7.With the influence of fashion magazines and fashion industries going online clothing fashions are attracting more and more attention. Fashion is a popular style or pratice, especially in clothing, footwear, accessories and body. Fashion is a distinctive and often constant trend in the style in which a person dresses. It is the prevailing styles in behaviour and the newest creations of textile designers. Fashion trends change daily , it can not stay unchanged. Fashion trends are influenced by several factors including political , economical , social and technological.

Online shopping uses internet, network and web - based technologies in creating interactive medium between sellers and customers.

II. PROBLEM STATEMENT

To implement a predictive Model which will predict the outfits by choosing the cloths. We propose an end-to-end system of encoding visual features using a deep convolutional network, which can take a fashion outfit as the input and second multi-modal deep learning

framework which exploits the context information from image, title and category.

III. LITERATURE REVIEW

In [1] IEEE- Si Liul, Tam V. Nguyen, Shuicheng Yan, "Hi, Magic Closet, Tell Me What to Wear!" – 2012 This paper proposes the magic closet system which automatically recommends the most suitable clothing by considering the wearing properly and wearing aesthetically principles. Limited by the current performance of human detector, some clothing in the user's clothing photo album may be misdirected.

In [2] IEEE – Andreas Veit,Balazs kovacs, Sean Bell Julian Mc Ailey 3,Ka Vita Balal,serge Belongiel."Learning visual clothing style with Heterogeneous Dyadic co-occurencees"-2015.This paper presented a new learning framework that can recover a style space for clothing items from co-occurrence information as well as category labels. The algorithm used in this paper was old and not feasible as compare to our approach.

In [3] IEEE - M. Hadi Kiapour , Xufeng Han, Svetlana Lazebnik, Alexander C. Berg, Tamara L. Berg Where to Buy It: Matching Street Clothing Photos in Online Shops. – 2015 This paper, define a new task, Exact Street to Shop,where our goal is to match a real-world example of a garment item to the same item in an online shop. This algorithm already had the predefined style stored in their databases.

In [4] IEEE - Zheng Song, Guangcan Liu, Changsheng Xu, Hanqing Lu, Shuicheng Yan Street-to-Shop: Cross-Scenario Clothing Retrieval via Parts Alignment and Auxiliary Set - 2012 This paper, address a problem of cross- scenario clothing retrieval - given a daily human photo captured in general environment, e.g., on street, finding similar clothing in online shops, where the photos are captured more professionally and with clean background. This paper did not consider the new fashion that is going to enter in the lifestyle. It only considered the outfit which people are wearing i.e. trending outfit.

In [5] IEEE - K. Yamaguchi, M. H. Kiapour, L. E. Ortiz, and T. L. Berg, "Retrieving similar styles to parse clothing," – 2015 a clothing parsing method based on fashion image retrieval. In which system combines global parse models, nearest-neighbor parse models, and transferred parse predictions. This paper did not consider the mixed fashion tradition like our does.

IV. PROPOSED SYSTEM

In this paper, we propose a machine learning system to compose fashion outfits automatically. We propose deep learning framework , which exploits the context information image , title and category. The full automatic composition system is built upon the scorer by iteratively evaluating all possible outfit candidates. We propose an end-to-end system of encoding visual features using a deep convolutional network , which can take a fashion outfit as the input and predict the user engagement levels.

V. ALGORITHM

- **Neural Network Algorithm**

The proposed system uses the Neural Network algorithm. Neural Network is generally presented as systems of interconnected neurons which send messages to each other.IN this algorithm three layers are used input layer , hidden layer and output layer. An neural network is a computational model based on the structure and functions of biological neural networks.

VI. METHODOLOGY

- **Fashion Outfit Composition**

Fashion Outfit Composition algorithm composes the outfit and offers it to the customer, on the basis of seed outfit. Seed item means the item that has already been chosen by the users.

- **Fashion Outfit Scoring Model**

The scoring model consists of: Feature encoders for each modality, Fusion model to integrate the multiple modalities, pooling model to map the outfit into a single feature vector, Classification model to perform prediction.

VII. ADVANTAGES

1. Saves Time
2. Convenient
3. Save Energy
4. Save Fuel
5. 24/7 Availability
6. Easy to search Merchandise You want to Buy
7. Comparison of prices.
8. No crowds

VIII. CONCLUSION

In this paper, we consider the challenging problem of fashion outfit composition, which reflects the difficulties of matching domain expert knowledge and modelling the diversity in fashion. We propose a

generic composition algorithm based on outfit quality scorer. The outfit quality scorer is an end-to-end trainable system, which achieves promising performance. We find that the combination of multi-modalities and proper pooling of the instance level features, leads to the best performance.

IX. ACKNOWLEDGEMENT

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