Smart Fashion Recommendation Application

Abstract:

 In recent years, the textile and fashion industries have witnessed an enormous amount of growth in fast fashion. On e-commerce platforms, where numerous choices are available, an efficient recommendation system is required to sort, order, and efficiently convey relevant product content or information to users. Image-based fashion recommendation systems (FRSs) have attracted a huge amount of attention from fast fashion retailers as they provide a personalized shopping experience to consumers. With the technological advancements, this branch of artificial intelligence exhibits a tremendous amount of potential in image processing, parsing, classification, and segmentation. Despite its huge potential, the number of academic articles on this topic is limited. The available studies do not provide a rigorous review of fashion recommendation systems and the corresponding filtering techniques. To the best of the authors' knowledge, this is the first scholarly article to review the state-of-the-art fashion recommendation systems and the corresponding filtering techniques. In addition, this review also explores various potential models that could be implemented to develop fashion recommendation systems in the future. This paper will help researchers, academics, and practitioners who are interested in machine learning, computer vision, and fashion retailing to understand the characteristics of the different fashion recommendation systems.

Introduction

 Clothing is a kind of symbol that represents people's internal perceptions through their outer appearance. It conveys information about their choices, faith, personality, profession, social status, and attitude towards life. Therefore, clothing is believed to be a nonverbal way of communicating and a major part of people's outer appearance. Recent technological advancements have enabled consumers to track current fashion trends around the globe, which influence their choices . The fashion choices of consumers depend on many factors, such as demographics, geographic location, individual preferences, interpersonal influences, age, gender, season, and culture [4–8]. Moreover, previous fashion recommendation research shows that fashion preferences vary not only from country to country but also from city to city [9]. The combination of fashion preferences and the abovementioned factors associated with clothing choices could transmit the image features for a better understanding of consumers' preferences. Therefore, Citation: Chakraborty, S.; Hoque, M. S.; Jeem, N.R.;

analyzing consumers' choices and recommendations is valuable to fashion designers and retailers [9–11]. Additionally, consumers' clothing choices and product preference data have become available on the Internet in the form of text or opinions and images or pictures. Since these images contain information about people from all around the world, both online and offline fashion retailers are using these platforms to reach billions of users who are active on the Internet [10,12,13]. Therefore, e-commerce has become the predominant channel for shopping in recent years. The ability of recommendation systems to provide personalized recommendations and respond quickly to the consumer's choices has contributed significantly to the expansion of e-commerce sales [14]. According to different studies, e-commerce retailers, such as Amazon, eBay, and Shopstyle, and social networking sites, such as Pinterest, Snapchat, Instagram, Facebook, Chictopia, and Lookbook, are now regarded as the most popular media for fashion advice and recommendations . Research on textual content, such as posts and comments, emotion and information diffusion, and images has attracted the attention of modern-day researchers, as it can help to predict fashion trends and facilitate the development of effective recommendation systems .

Literature Survey

The era of recommendation systems originally started in the 1990s based on the widespread research progress in Collective Intelligence. During this period, recommendations were generally provided to consumers based on their rating structure . The first consumer-focused recommendation system was developed and commercialized by Goldberg, Nichols, Oki and Terry in 1992. Tapestry, an electronic messaging system was developed to allow users only to rate messages as either a good or bad product and service. However, now there are plenty of methods to obtain information about the consumer's liking for a product through the Internet. These data can be retrieved in the forms of voting, tagging, reviewing

and the number of likes or dislikes the user provides. It may also include reviews written in blogs, videos uploaded on YouTube or messages about a product. Regardless of communication and presentation, medium preferences are expressed in the form of numerical values .