

# SMART FASHION RECOMMENDER APPLICATION

## 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. Recent technological advancements have enabled consumers to track current fashion trends around the globe, which influence their choices. Therefore, analyzing consumers' choices and recommendations is valuable to fashion designers and retailers. 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. Recommender systems such as Youtube, Amazon, Netflix, and many other similar web services have become increasingly important in our lives over the previous few decades.

## LITERATURE SURVEY:

[1] **Shinya M et.al.** The paper proposed a retrieval technique for fashion-related images on websites. It's quite difficult to find images of people wearing clothing from images of clothing. Conventional image retrieval methods are inapplicable in this case. As a result, we separate fashion imagery from other critical factors. The full-body fashion coordinate image is divided into four areas, and an image is returned that includes a similar clothing image to the query in the target area.

[2] **Congying Guan., & Shengfeng Qin** came up with a clever or astute suggestion for the International Journal of Clothing Science and Technology. Its domain expertise knowledge of mixing and matting criteria facilitates exploring the interrelationship between fashion and the user through the usage of intelligent algorithms. To learn the talent of clothing attribute evaluation, they employed decision trees, analytical hierarchy process, sensory engineering, fuzzy math, genetic algorithms, neural networks, and support vector machines.

[3] **Jun Xiang et al.** In this, the recommendations are based on previous sales, clothing purchase data, eye movement records, and item click rate. It delivers outfit ideas based on the user's preferences and interests, utilizing an analytical hierarchy method. The CNN Algorithm can be used in conjunction with feature extraction and image classification to aid in the retrieval of comparable picture products.

[4] **Sebastian Heinz et al.** discovered that buyers are more likely to buy uncommon things, but they also tend to buy more items at once. They presented the results of a backtest using data from 100k frequent customers at Zalando, Europe's top fashion forum. Their suggestion employs a pair of neural networks to solve the initial cold start issue. The output is compared to the static collaborative filtering approach and the popularity ranking baseline.

[5] **Heinz et al.** employed a dynamic collaborative filtering technique to construct a recommendation system using RNN (Recurrent Neural Network). From a single purchase price to a series of sales events, the RNN-based recommendation system analyses individual style preferences. The proposed Recurrent Neural Network model had a greater Area under the Curve value of 88.5 percent than a popularity ranking baseline approach, which had an Area under the Curve value of 80.2 percent.

[6] **Guan, et al.** developed a content-based filtering algorithm using CNN (Convolutional Neural Network). Using image features, the recommendation algorithm produced weather-related outfit pairing recommendations. On the Normalized Discounted Cumulative Gain (NDCG) ranking scale, the proposed Convolution Neural Network model received a maximum score of 0.50, exceeding the support vector machine (SVM), which received a score of 0.45.

[7] **Leininger et al.** The research proposes a retail recommendation system using kNN and collaborative filtering approaches. Distance is calculated using cosine similarity between related things, then individual products are clustered. The accuracy in terms of AUC (91 percent) was higher than the baseline model's AUC (85 percent).

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