A Study on Vector-Based User-Preferred Fashion Matching

Seolhwa Lee[1], Heuiseok Lim[1]

[1] Department of Computer Science and Engineering, Korea University, Seongbuk-gu, Seoul, South Korea
{whiteldark, limhseok}@korea.ac.kr

Abstract. The size of the domestic fashion market is estimated to reach 43 trillion won from 2017, and it is steadily increasing every year. The increase in the size of the fashion market is also connected with the fashion needs of consumers. As the market grows, it takes a lot of time to search for the style that you want among many clothes produced. The existing favorite fashion profiling method uses a lot of online questionnaires and has a limitation in that it is time consuming and the user can feel bored somewhat. Therefore, this paper proposes a new and effective profiling method through user implicit profiling technique for intelligent fashion product search and recommendation to solve these limitations.

Keywords: Fashion Data Mining, User Profiling.

1 Introduction

The size of the domestic fashion market is estimated to reach 43 trillion won in 2017, 1.8% in 2016 and 3.5% in 2017 [1] . The increase in the size of the fashion market is connected with the fashion needs of consumers. As the size of the market grows, it takes a lot of time to find and search for the fashion of the style desired by the large amount of clothes produced..

In the case of a fashion shopping mall, in order to grasp a consumer's preferred fashion needs and provide an appropriate service, the user should grasp the fashion style preferred by the user in the shopping mall. Therefore, there is a need for effective preferred fashion profiling that automatically generates an individual profile to suit a preferred fashion, rather than searching for a consumer's desired style over

time..

The user preference fashion profiling system proposed in this study is an implicit profiling collection model using vector - based neural network and can solve the existing limitations by using the simplified profiling method. The composition of this paper is as follows. Chapter 2 explains the structure of the proposed system, Chapter 3 presents conclusions and future works.
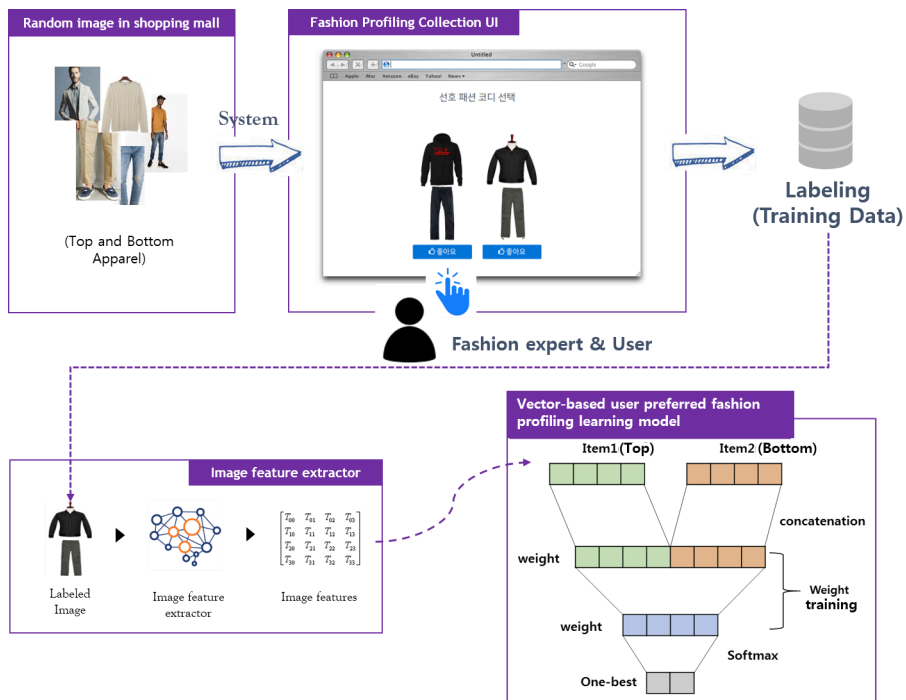

Fig. 1. Vector Based User Preference Fashion Profiling Learning Model Overview

2 Vector-Based User-Preferred Fashion Matching System

The vector - based intelligent user preferred fashion profiling system proposed in this study is divided into two parts. Weights are preliminarily learned through a fashion expert, and the learned weights are reflected in the profiling model of the individual user so as to be updated in accordance with the preferred fashion.

2.1 Expert Filtering

Before introducing the style to the user, the user can pre-learn through the fashion expert group so that the fashion that is not generally preferred by the expert can be reflected in the weight of the model and filtered.

2.2 Vector-Based User-Preferred Fashion Matching

When presenting the style to the user, it also suggests the top and bottom at random and follows the learning style of the model introduced in 2.1. In the personal preference fashion profiling model, the weight value learned in 2.1 is used as the basic weight value of the model, and the weight value is continuously updated as the individual learns the model by using the learning data labeled in the preferred style.

This learning method eventually learns to optimize the pairwise ranking loss function [2] for the pair of preference styles for the top and bottom. The predicted value of the preference for a given style can be obtained by using the output value of the finally learned function. The most optimal style (one-best) among the preference prediction values can be regarded as a preferred fashion of the user.

3 Conclusion and Future Work

In this study, we propose a user implicit profiling method for intelligent fashion product search and recommendation. The proposed model will be able to search and recommend intelligent products through effective profiling by using a different profiling method than existing studies.

Based on the proposed model, real learning is performed and real - world users are expected to improve the performance of the model through verification.

Acknowledgments

References

1. "A survey of domestic fashion market size in the second half of 2017". 2017, Korea Textile Industry Association.
2.] Yan, R., Y. Song, and H. Wu. "Learning to respond with deep neural networks for retrieval-based human-computer conversation system". in *Proceedings of the 39th International ACM SIGIR conference on Research and Development in* Appendix: Springer-Author Discount