Supplementary Material for Personalized Outfit Recommendation with Learnable Anchors

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In this supplementary material, we show some further visualization results for the datasets that we used.

A Outfit Retrieval Results

For each recommended outfit, we can retrieve similar outfits from the user's past selections to interpret the recommended results. In this section, we show the results for the IQON-550 dataset in Fig. 1. Outfits at the top are the recommended ones and outfits at the bottom are the support outfits from the training set. We further show the cosine similarity score between the recommended outfits and the support outfits.



Figure 1: The outfits retrieval results on IQON-550. We show results from LPAE-u and LPAE-g respectively.

B New User Profiling Results

In Fig. 2 and Fig. 3 we show the top recommended outfits for the new user profiling task on the IQON550 dataset. Only a single outfit is given for user modeling. The red box indicates the query outfit, the orange box indicates positive outfit and the blue box indicates negative outfit.



Figure 2: Examples for the new user problem using LPAE-u.



Figure 3: Examples for the new user problem using LPAE-g.

C Outfit Embedding Visualization

To show whether the learned outfits are well organized in the embedding space, we plot the t-SNE [2] for a randomly selected user from Polyvore-630 in Fig. 4. For better visualization, we first cluster the outfit embeddings into 5 classes using k-means [1]. Since we encode outfits and anchors into a single style space, outfits with similar styles can be brought closer to each other due to the outfit-anchor similarity. As we can see, outfits with similar styles lie close to each other.



Figure 4: t-SNE of outfits for one user.

References

- [1] Stuart Lloyd. Least Squares Quantization in PCM. IEEE Transactions on Information Theory, 28(2), 1982. 3
- [2] Laurens van der Maaten and Geoffrey E Hinton. Visualizing Data using t-SNE. JMLR, 9, 2008. 3