

Deep Hybrid Embeddings for Cold-Start Item Recommendation

Invited Talk

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ABSTRACT

In this talk, we present Neural Feature Combiner (NFC), a new item-based, deep learning model for item cold-start recommendation. The new model learns to generate a hybrid similarity matrix, taking as input only the content representations of the items. Its architecture, which allows tackling the dynamic nature of the cold-start problem, is composed of two main components. The first maps content features into a low-dimensional embedding space. The second combines the features that compose the embeddings, in order to compute the similarity values. The model is trained end-to-end using collaborative similarities as target values. In the talk, we show the results of our experiments, demonstrating that learning from collaborative similarities has several advantages over learning from user-item interactions. We provide empirical evidence that NFC outperforms the state-of-the-art for item cold-start recommendation

in multiple scenarios, arguing about its effectiveness in exploiting collaborative information. Finally, we present a qualitative analysis of the embeddings generated by NFC, showing its ability to provide robust latent representations.

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