

Personality-Aware Product Recommendation System Based on User Interests Mining and Metapath Discovery

ABSTRACT:

A recommendation system is an integral part of any modern online shopping or social network platform. The product recommendation system as a typical example of the legacy recommendation systems suffers from two major drawbacks: recommendation redundancy and unpredictability concerning new items (cold start). These limitations take place because the legacy recommendation systems rely only on the user's previous buying behavior to recommend new items. Incorporating the user's social features, such as personality traits and topical interest, might help alleviate the cold start and remove recommendation redundancy. Therefore, in this article, we propose Meta-Interest, a personality-aware product recommendation system based on user interest mining and metapath discovery. Meta-Interest predicts the user's interest and the items associated with these interests, even if the user's history does not contain these items or similar ones. This is done by analyzing the user's topical interests and, eventually, recommending the items associated with the user's interest. The proposed system is personality-aware from two aspects; it incorporates the user's personality traits to predict his/her topics of interest and to match the user's personality facets with the associated items. The proposed system was compared against recent recommendation methods, such as deep-learning-based recommendation system and session-based recommendation systems. Experimental results show that the proposed method can increase the precision and recall of the recommendation system, especially in cold-start settings.

SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS:

- System : Pentium i3 Processor.
- Hard Disk : 500 GB.
- Monitor : 15'' LED
- Input Devices : Keyboard, Mouse
- Ram : 4 GB

SOFTWARE REQUIREMENTS:

- Operating system : Windows 10.
- Coding Language : Java
- Web Framework : Flask

REFERENCE:

S. Dhelim, H. Ning, N. Aung, R. Huang and J. Ma, "Personality-Aware Product Recommendation System Based on User Interests Mining and Metapath Discovery," in IEEE Transactions on Computational Social Systems, vol. 8, no. 1, pp. 86-98, Feb. 2021, doi: 10.1109/TCSS.2020.3037040.