

Modeling the Evolution of Fashion Trends using Matrix Factorization Techniques

Leutrim Kaleci

Master thesis in Computer Science

Nowadays, the job of a recommender system gets more and more complicated as the result of new data coming in constantly. This has impact also on the preferences of the users to whom the items are recommended - who tend to change their preferences as new items appear. Such that, different time-dependent models are proposed for capturing this dynamicity, by always considering the application context of the recommender system. According to the application context of the recommender system, different dynamics are at play. In this thesis, the focus is on the application of three different models in the context of fashion data. Respectively, firstly the timeSVD++ model (applied earlier on movie data, and showed good performance) and TVBPR model (a model which, additionally, makes use of other source of information for learning the parameter values) are deeply analyzed, and then the performance with regard to their application in the context of fashion data is provided. Afterwards, a new model is introduced, timeSVDVC, by extending the timeSVD++ model with one more additional component, the visual component. The extended version of timeSVD++ provided promising results, such that showing better performance when compared to two other models mentioned above.

Prof. Philippe Cudré-Mauroux