

Presentation of Personalized Recommendations via Web

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Recommender systems are software tools and techniques that try to provide (recommend) certain objects to the user that could help him in his activity in the system [1]. We can differentiate between personalized and non-personalized recommendations.

In the context of personalized recommendations, the advantage is the possibility of response to the needs, goals or hobbies for some user. On the other hand, a relatively serious problem or disadvantage is the lack of trust of users, which massively prevents more widespread use or application of the concept of personalised recommendations.

An interesting approach to reducing the problem of mistrust associated with the recommendations is various forms of recommendations presentation. The way the recommendations are presented affects the way a user interacts with the system [2]. Currently, there are several methods for presentation, e.g., different form of visualization or explanation of recommendations. Explanations try to describe the reasons why the recommendation could be useful to the users [3].

Our goal is to reduce the mistrust of users in the context of recommendations. We want to achieve this by using different forms of presentation of recommendations such as visualizations and explanations. They can be very interesting and helpful in the context of our problem and they also can be combined to achieve better results.

In the context of visualization, we will design a presentation of recommendations in terms of two basic attributes:

1. Content of recommendation item. In this area, our aim is to find out how to provide information about the recommendations and how much information about the item (both recommendations and their explanations) is relevant and what impact has the amount of information on the suitability of the recommendations.
2. Design of recommended items. In this case we want to compare several methods of different placement, colour or shape of the element, which contains recommendations or explanations.

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Explanation is another area where we found a several interesting topics. Through these topics, our goal is to find a method to explain recommendations, which will be most appropriate from the perspective of the user.

1. Context. In terms of the context there is an interesting idea of using the context of the user to explain recommendations. This means that we could explain the recommendations based on actual information about user activity in system. Thus, we would be independent of the recommendation technique and we could focus only on presentation of recommendations.
2. Compensation of unsuitable recommendations. In this context, we would like to look at the use case where we recommend bad recommendation and find out how explanations can compensate the effect of these bad recommendations. In this case, it would be interesting to look at compensation in terms of revaluation (user visits object, which is uninteresting for him) as well as in terms of underestimation (user does not notice object that could be interesting for him).

In order to evaluate our approach, we will perform several experiments in our system. This system will be a web page containing news articles from some Slovak news portal (e.g. SME). Within this system, we will implement one of the standard recommendations techniques (e.g. collaborative filtering). Then we will try to apply different approaches of visualization and explanation (mentioned above) to presenting the recommendations to users.

We plan to perform uncontrolled long-term experiment as well as several smaller experiments using eye-tracker technology. Within the experiments we want to find out what are the user opinions about recommendations before the experiment and how they have changed their thoughts after the experiment. We plan also use eye-tracker and see how users respond to different approaches to presenting the recommendations. This means that one part of the information we gathered from interviews and questionnaires, and the second part we obtain by observing the behaviour of the user in the system.

We see great potential that our approach can bring in the context of improving the transparency of recommendations. In the future work we can imagine explaining the recommendations using information from the area of psychology that can bring completely new insights into the problems associated with recommendations.

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References

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