

# RecSys'17 Joint Workshop on Interfaces and Human Decision Making for Recommender Systems

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## ABSTRACT

As intelligent interactive systems, recommender systems focus on determining predictions that fit the wishes and needs of users. Still, a large majority of recommender systems research focuses on accuracy criteria and much less attention is paid to how users interact with the system, and in which way the user interface has an influence on the selection behavior of the users. Consequently, it is important to look beyond algorithms. The main goals of the IntRS workshop are to analyze the impact of user interfaces and interaction design, and to explore human interaction with recommender systems from a human decision making perspective. Methodologies for evaluating these aspects are also within the scope of the workshop.

## 1 INTRODUCTION

The complexity of decision tasks, limited cognitive resources of recommender systems users, and a tendency to keep decision efforts as low as possible are related to the phenomenon of bounded rationality [12], i.e., users tend to employ decision heuristics rather than exhaustive search for optimal decisions. Furthermore, preferences of users are typically constructed within, and often changed throughout a recommendation session [1].

Decision making under bounded rationality is a door opener for different types of influences on decision outcomes. There exist different psychological theories that describe settings that can lead to suboptimal decisions. The manner in which alternatives are

presented via a user interface, including accompanying information, can have an impact on the decision outcome.

Recently, these issues have gained some attention in the recommender systems community [4, 8]. Cosely et al. [6] show that user ratings can be manipulated by the predictions shown by the system. Chang et al. [3] show that preference elicitation can be completed more efficiently if the interface does not support initial personalization by letting users express their preferences on individual items but rather on groups of items. Stettinger et al. [10] analyze anchoring effects in the preference acquisition phase of group decision scenarios. The earlier the preferences of other group members are visible the lower is the standard deviation of individual user ratings. The later preferences are disclosed, the higher is the satisfaction with the final group decision and the perceived degree of decision support. Teppan and Felfernig [13] analyze the impact of decoy effects in recommendation scenarios where disliked items as part of a result set can have an impact on the selection behavior of the user. Chen and Pu [5] and O'Donovan et al. [11] show the positive impact of explanations on the trustworthiness of recommender systems. For an overview of different explanation approaches in recommender systems see e.g., [14]. Bollen et al. [2] show that larger recommendation sets that contain solely good items do not necessarily trigger higher choice satisfaction since increased difficulty in selection choice counteracts the attractiveness of the recommendation set. Willemsen et al. [16] showed that such choice difficulty can be reduced by latent feature diversification, an algorithm adaptation based on psychological theory. Finally, Tkalcic et al. provide an overview of the role of emotions in recommender systems. Specifically, they discuss models and acquisition methods for emotions and personality [15]. For further related discussions see e.g., [8, 9].

IntRS aims to bring together researchers and practitioners focusing on topics of designing and developing novel intelligent interfaces and evaluating their impact in terms of different dimensions

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such as usability, perceived recommendation quality, time needed to take a decision, decision quality and degree of subjective well-being [7]. A primary goal of the workshop is to foster a community with a strong focus on recommendation-related decision making and user interface design issues.

## 2 TOPICS AND CONTRIBUTIONS

The workshop covers *three interrelated themes*:

- (1) *user interfaces* (e.g., visual interfaces, explanation interfaces, natural language interfaces, trust-aware and social interfaces, context-aware interfaces, ubiquitous and mobile interfaces, and decision making interfaces);
- (2) *interaction mechanisms, user modeling, and decision making* (e.g., cognitive modeling for recommender systems, human - recommender interaction, controllability, decision theories, preference construction, interfaces that take into account the role of emotions, argumentation and persuasive recommendation, cultural differences, approaches to high-quality group decision making, and the detection and avoidance of decision biases);
- (3) *evaluation* (e.g., case studies, empirical studies, new interfaces and interaction designs, and evaluation methods).

Topics of *contributions submitted* to this year's workshop include:

- learning binary preference relations;
- rating by ranking;
- personalized presentation of recommendations;
- review-based filtering for interactive recommender systems;
- simplifying user privacy experience;
- cognition-based evaluation models;
- diversity-enhancing interfaces for recommender systems;
- user control and cognitive load;
- human choice support;
- guided course recommendations for students;
- personalized explanations in recommender systems.

## 3 WORKSHOP FORMAT

The 4<sup>th</sup> *Joint Workshop on Interfaces and Human Decision Making for Recommender Systems (IntRS'17)* is a result of merging two original RecSys workshops: *Human Decision Making and Recommender Systems (Decisions@RecSys – 2010–2013)* and *Interfaces for Recommender Systems (InterfaceRS'12)*. The idea of merging the two workshops was motivated by the strong inter-relationship between user interface and human decision making topics. The combination of these two aspects seems to be highly attractive, for example, the IntRS'15 workshop in Vienna had 60 participants and IntRS'16 in Boston had similar attendance.

IntRS'17 accepted both long (8 pages max) and short (4 pages max) papers. For short papers, alternative modes of presentation were encouraged, such as demos, playing out of scenarios, mock-ups, and alternate media such as video. Each accepted contribution was included in the workshop proceedings and presented in a workshop session.

An invited talk by Dietmar Jannach titled "*Interacting with Recommenders - Overview and Research Directions*" enriched the workshop program.

The list of accepted IntRS'17 papers and the workshop schedule can be found at: [intrs17.wordpress.com](http://intrs17.wordpress.com).

## 4 CONCLUSIONS

IntRS aims to bring together researchers and practitioners from areas related to users interfaces and decision making in recommender systems. This year's contributions are high quality and are expected to attract a large audience.

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