# Workshop on Human Decision Making in Recommender Systems: Decisions@RecSys'13

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## ABSTRACT

A primary function of recommender systems is to help their users to make better choices and decisions. The overall goal of the workshop is to analyse and discuss novel techniques and approaches for supporting effective and efficient human decision making in different types of recommendation scenarios. The submitted papers discuss a wide range of topics, from core algorithmic issues to the management of the human computer interaction.

## Categories and Subject Descriptors

H.4.2 [**Information Systems Applications**]: Types of Systems—*Decision support*; H.3.3 [**Information Storage and Retrieval**]: Information Search and Retrieval—*Information filtering*

## General Terms

Algorithms, Experimentation, Human Factors, Theory

## Keywords

Decision Making; Decision Psychology; Recommendation Algorithms; Decision Biases

## 1. OVERVIEW

Users interact with recommender systems to obtain useful information about products or services that may be of interest for them. But, while users are interacting with a recommender system to fulfill a primary task, which is usually the selection of one or more items, they are facing several other decision problems. For instance, they may be requested to select specific feature values (e.g., camera's size, zoom) as criteria for a search, or they could have to identify features to be used in a critiquing based recommendation session, or they may need to select a repair proposal for inconsistent user preferences when interacting with a recommender. In all these scenarios, and in many others, users of recommender systems are facing decision tasks.

The complexity of decision tasks, limited cognitive resources of users, and the tendency to keep the overall decision effort as low as possible is modeled by theories that conjecture "bounded rationality", i.e., users are exploiting decision heuristics rather than trying to take an optimal decision [4]. Furthermore, preferences of users will likely change throughout a recommendation session, i.e., preferences are constructed in a specific decision context and users may not fully know their preferences beforehand [2]. Within the scope of a decision process, preferences are strongly influenced by the goals of the customer, existing cognitive constraints, and the personal experience of the customer [6]. Due to the fact that users do not have stable preferences, the interaction mechanisms provided by a recommender system and the information shown to a user can have an enormous impact on the outcome of a decision process [3]. For example, some authors analyzed the existence of anchoring effect in recommender systems and show the impacts of different types of rating drifts on a user's rating behavior [1, 7].

Theories from decision psychology and cognitive psychology have already elaborated a number of methodological

tools for explaining and predicting the user behavior in these scenarios. In [5], the authors pointed out their importance for recommender systems research, but current systems hardly integrate this knowledge in the computational model. The major goal of this workshop is to establish a platform for industry and academia to present and discuss new ideas and research results that are related to the topic of human decision making in recommender systems. The workshop is focused on the role of decision theories in advancing recommender systems research and applications. The main topics of the workshop are:

- Theories, algorithms and applications
  - Decision theories in recommender systems (e.g., priming, framing, and decoy effects)
  - Trust inspiring recommendation
  - Persuasive recommendation (e.g., argumentation-aware recommendation)
  - The role of emotions and personality in recommender systems
  - Detection and avoidance of decision biases
- User modeling and preference elicitation
  - Modeling user information search and decision making processes in recommender systems
  - Active approaches to preference elicitation
- User interfaces
  - User interfaces for decision making
  - Explanations in Recommender Systems
- Evaluation
  - User perceptions leading to the acceptance of recommendations
  - Empirical studies and innovative metrics of system performance

In particular, papers submitted to this third edition of the workshop have focused on:

- Preference and recommendation aggregation techniques for group recommender systems;
- The role of emotions in recommender systems;
- Interaction design for better decision support in recommender systems;

- Techniques for detecting relevant contextual conditions which influence the users' decision making process;
- Algorithms for avoiding biased recommendations and avoid the Filter Bubble;
- User profiles based on explicit knowledge rather than latent factors;
- Hybrid approaches for improved accuracy and efficiency;
- Analysis of the usage of gestural interaction patterns for mobile recommender systems.

## 2. FURTHER INFORMATION

The workshop material (list of accepted papers, invited talk, and the workshop schedule) can be found at the Decisions@RecSys 2013 workshop webpage: http://recex.ist.tugraz.at.

## 3. REFERENCES

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