RecSys'16 Joint Workshop on Interfaces and Human Decision Making for Recommender Systems

Peter Brusilovsky
School of Information Sciences
University of Pittsburgh
USA
peterb@pitt.edu

Alexander Felfernig
Institute for Software Technology
Graz University of Technology
Austria
afelfernig@ist.tugraz.at

Pasquale Lops
Department of Computer Science
University of Bari
Italy
pasquale.lops@uniba.it

John O'Donovan
Department of Computer Science
University of California
USA
jod@cs.ucsb.edu

Giovanni Semeraro
Department of Computer Science
University of Bari
Italy
semeraro@di.uniba.it

Nava Tintarev
Department of Computer Science
Bournemouth University
UK
ntintarev@bournemouth.ac.uk

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. Methodologies for evaluating these aspects are also within the scope of the workshop.

CCS Concepts

•Information systems → Decision support systems; Information retrieval; •Human-centered computing → User interface design;

Keywords

Recommender Systems, Human Decision Making, User Interfaces, Human Computer Interaction, Evaluation Methods, Decision Biases

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. 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

RecSys'16 September 15-19, 2016, Boston, MA, USA

ACM ISBN 978-1-4503-4035-9/16/09…$15.00

DOI: http://dx.doi.org/10.1145/2959100.2959199

focusing on topics of designing and developing novel intelligent interfaces and evaluating their impact in terms of different dimensions 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), and (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 are matchmaking for decision support, explanation interfaces, cross-cultural aspects of recommender user interfaces, decision biases triggered by recommender user interfaces, effects of user interfaces on the perceived recommendation quality, and novel applications.

3. WORKSHOP FORMAT

The *3rd Joint Workshop on Interfaces and Human Decision Making for Recommender Systems (IntRS'16)* 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 interrelationship 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. The list of accepted IntRS'16 papers and the workshop schedule can be found at: *intrs16.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.

5. ADDITIONAL AUTHORS

Martijn Willemsen (School of Innovation Sciences, Eindhoven University of Technology, The Netherlands, email: `M.C.Willemsen@tue.nl`).

6. REFERENCES

[1] R. Bettman, M. Luce, and J. Payne. Constructive consumer choice processes. *Journal of Consumer Research*, 25:187–217, 1998.

[2] D. Bollen, B. Knijnenburg, M. Willemsen, and M. Graus. Understanding choice overload in recommender systems. In *4th ACM Conference on Recommender Systems*, pages 63–70, Barcelona, Spain, 2010.

[3] S. Chang, F. Harper, and L. Terveen. Using groups of items for preference elicitation in recommender systems. In *18th ACM Conference on Computer Supported Cooperative Work & Social Computing*, pages 1258 – 1269, 2015.

[4] L. Chen, M. deGemmis, A. Felfernig, P. Lops, F. Ricci, and G. Semeraro. Human decision making and recommender systems. *ACM Transactions on Interactive Intelligent Systems*, 3(3):17, 2013.

[5] L. Chen and P. Pu. Trust building in recommender agents. In *International Workshop on Web Personalization, Recommender Systems and Intelligent User Interfaces (WPRSIUI'05)*, pages 135–145, Reading, UK, 2005.

[6] D. Cosley, S. Lam, I. Albert, J. Konstan, and J. Riedl. Is seeing believing? how recommender interfaces affect users' opinions. In *Conference on Human Factors in Computing Systems*, pages 585–592, 2003.

[7] E. Diener. The science of happiness and a proposal for a national index. *Am. Psychol.*, 55(1):34–43, 2000.

[8] A. Jameson, M. Willemsen, A. Felfernig, M. de Gemmis, P. Lops, G. Semeraro, and L. Chen. Human decision making and recommender systems. *Recommender Systems Handbook*, pages 619–655, 2015.

[9] B. Knijnenburg, M. Willemsen, Z. Gantner, H. Soncu, and C. Newell. Explaining the user experience of recommender systems. *User Modeling and User-Adapted Interaction (UMUAI)*, pages 441–504, 2012.

[10] G. L. M. Stettinger, A. Felfernig and S. Reiterer. Counteracting anchoring effects in group decision making. In *23rd Conference on User Modeling, Adaptation, and Personalization*, pages 118–130, Dublin, Ireland, 2015.

[11] J. O'Donovan, B. Smyth, B. Gretarsson, S. Bostandjiev, and T. Höllerer. Peerchooser: Visual interactive recommendation. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, CHI '08, pages 1085–1088, New York, NY, USA, 2008. ACM.

[12] H. Simon. A behavioural model of choice. *Quarterly Journal of Economics*, 69(1):99–118, 1955.

[13] E. Teppan and A. Felfernig. Minimization of decoy effects in recommender result sets. *Web Intelligence and Agent Systems*, 1(4):385–395, 2012.

[14] N. Tintarev and J. Masthoff. Explaining recommendations: Design and evaluation. In *Recommender Systems Handbook*, pages 353–382. Springer, 2015.

[15] M. Tkalcic, M. deGemmis, and G. Semeraro. Personality and emotions in decision making and recommender systems. In *1st International Workshop on Decision Making and Recommender Systems*, pages 14–18, Bolzano, Italy, 2014.