Workshop on Information Heterogeneity and Fusion in Recommender Systems (HetRec 2010)

Peter Brusilovsky
University of Pittsburgh, USA
peterb@pitt.edu

Iván Cantador
Universidad Autónoma de Madrid, Spain
ivan.cantador@uam.es

Yehuda Koren
Yahoo! Labs, Israel
yehuda@yahoo-inc.com

Tsvi Kuflik
University of Haifa, Israel
tsvikak@univ.haifa.ac.il

Markus Weimer
Yahoo! Labs, Silicon Valley, USA
weimer@yahoo-inc.com

Categories and Subject Descriptors

H.3.3 [**Information Storage and Retrieval**]: Information Search and Retrieval – *information filtering, retrieval models.*

General Terms

Algorithms, Experimentation, Performance, Human Factors.

Keywords

Recommender systems, information heterogeneity, information integration.

1. MOTIVATION AND GOALS

Recent years have shown much progress in the field of recommender systems, including the development of innovative models and very efficient algorithms. Almost all current systems are trying to make best use of a single kind of data, and are designed for specific domains and applications, without explicitly addressing the heterogeneity of the existing information. As an example, some systems are based on analysing user ratings, while others concentrate on understanding purchase history.

Recognising this limitation, research attention has been given to finding ways for combining/integrating/mediating user models for the purpose of providing better personalised services to users in many information seeking and ecommerce services. In spite of prior work, however, the issue remained one of the major challenges for recommender systems.

Increasingly, users create and manage more and more profiles in online systems for different purposes, such as leisure (e.g., Facebook), professional interests (e.g., LinkedIn), or specialised applications (e.g., LearnCentral for educational issues, PatientsLikeMe for health issues, etc.). Similarly, rated, tagged or bookmarked resources belong to distinct multimedia: text (e.g., Delicious, BibSonomy, Google News), image (e.g., Flickr, Picasa), audio (e.g., Last.fm, Spotify), or video (e.g., MovieLens, NetFlix, YouTube). Moreover, recommendation algorithms may also present heterogeneity based on different types of input (e.g., explicit feedback from ratings, reviews, tags, etc. vs. implicit feedback from records of views, queries and purchases), or based on different levels of input granularities (e.g., a user may not only rate individual songs, but also albums, artists or even a full music genre). Finally, contextual factors also increase heterogeneity in recommender systems. Location and time are key external elements that may affect the relevance of the recommendations, as shown in recent works. Many other factors can be taken into account as well, such as physical and social environment, device and network settings, and external events, to name a few.

HetRec workshop aimed to attract the attention of students, faculty and professionals both from academia and industry interested in addressing and exploiting any of the above forms of information heterogeneity and fusion in recommender systems.

Downloadable versions of the papers presented at the workshop can be found at:

http://ir.ii.uam.es/hetrec2010

2. TOPICS OF INTEREST

Topics of interest at HetRec included, but were not limited to:

Heterogeneity and fusion of information in user profiles

- Fusion of user profiles from different representations
- Combination of short- and long-term user preferences
- Combination of different types of user preferences: tastes, interests, needs, goals, mood, etc.
- Cross domain recommendations, based on user preferences about different interest aspects (e.g., by merging movie and music tastes)
- Cross representation recommendations, considering diverse sources of user preferences: explicit and implicit feedback

Heterogeneity and fusion of information in recommended resources

- Recommendation of resources of different nature: news, reviews, scientific papers, etc.
- Recommendation of resources belonging to different multimedia: text, image, audio, video
- Recommendation of resources annotated in different languages

Heterogeneity and fusion of information in contextual features

- Contextualisation of user preferences (e.g., user preferences at work, on holidays, etc.)
- Cross context recommendations (e.g., by merging information about location, time, social aspects, etc.)
- Multi-dimensional recommendation based on several contextual features (e.g., physical and social environment, device and network settings, external events, etc.)

RecSys'10, September 26-30, 2010, Barcelona, Spain.
ACM 978-1-60558-906-0/10/09.