CALL FOR PAPERS

UMUAI: Special Issue on Recommender Systems based on Rich Item Descriptions

USER MODELING AND USER-ADAPTED INTERACTION:
The Journal of Personalization Research (UMUAI)

Paper submission deadline: **December 1, 2017**, abstracts due: **September 15, 2017**
UMUAI Website: http://www.umuai.org

SCOPE

Automated recommendations have become a pervasive feature of our online user experience, and due to their practical importance, recommender systems also represent an active area of scientific research. Historically, the two main approaches of building recommender systems are collaborative filtering (CF) and content-based filtering (CB). In its pure form, collaborative filtering relies on the identification of preference patterns in a user community, which are typically encoded in a user-item rating matrix. Content-based filtering approaches, in contrast, try to learn the preference model of a user relying on a feature-based representation of the recommendable items. In more recent years, the dichotomy between CF and CB has become more and more blurred, and we observe various attempts to incorporate additional side information and external knowledge sources into the recommendation process, regardless of the adopted recommendation approach. This side information predominantly contains additional knowledge about the recommendable items, e.g., in terms of their features, metadata, category assignments, relations to other items, user-provided tags and comments, or related textual or multimedia content.

Increased interest in these topics can be observed in the research community, which resulted in a number of research papers, dedicated workshops and alternative approaches for feeding recommender systems with rich item descriptions. That interest is also fueled by different developments:

• First, a number of recent research works show that methods based on rich item descriptions, despite being sometimes less accurate in offline experiments and despite being often based on very basic representations, are in some application domains more effective in practice than their pure CF-based counterparts.

• Second, methods based on rich item descriptions can have other advantages, e.g., when designing understandable and fine-grained user models, when assessing recommendation lists by quality factors like diversity, and when explaining recommendations to users based on these item features. In particular, the need for transparent algorithms has become increasingly relevant for recommender systems in recent years, e.g., because of the European Union's General Data Protection Regulation (GDPR), which emphasizes the users' right to explanation when people face artificial intelligence-based systems.

• Third, an increasing number of external knowledge sources have become available in recent years, including structured ones like DBpedia or Linked Open Data, semi-structured ones like Wikipedia, and unstructured user-generated content on Web 2.0 platforms. In addition, in particular in the last few years, new algorithmic approaches to effectively extract and process the available information were developed, including methods based on deep learning. This allows recommender systems to leverage much richer representations of items than in the past.

The goal of the special issue is to highlight recent progress in the area of recommender systems that propose novel approaches to identify, extract, process, and leverage information about the items in the recommendation process. Relevant submissions therefore focus on truly understanding – typically through in-depth empirical evaluations – in which ways different forms of rich item descriptions can be helpful to build better next-generation recommender systems.

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TOPICS

- Utilizing side information about items for user modeling and recommending including
  - structured sources, e.g., DBpedia, Linked Open Data, BabelNet, Wikidata
  - textual sources, e.g., Wikipedia or User-Generated Content like tags, reviews, and comments
  - multimedia ("low-level") features, e.g., videos or musical signals
- Approaches that rely on a semantic (deep) understanding of items and their features based, e.g., on formal ontologies
- Applying deep learning methods to model item features
- Leveraging rich item representations for more effective user modeling and recommendation
- Using side information about items to increase recommendation quality in terms of novelty, diversity, or serendipity
- Using side information about items to explain recommendations to users
- Leveraging side information and external sources for cross-lingual recommendations
- Using side information about items for transparent user modeling compliant with the General Data Protection Regulation
- Novel applications areas for recommender systems (e.g., music or news recommendation, off-mainstream application areas) based on item side information
- User studies (e.g., on the user perception of recommendations), field studies, in-depth experimental offline evaluations
- Methodological aspects (evaluation protocols, metrics, and data sets)

PAPER SUBMISSION & REVIEW PROCESS

Submissions will be pre-screened for topical fit based on extended abstracts. Extended abstracts (up to three pages in journal format) should be sent to pasquale.lops@uniba.it. Detailed instructions for paper submissions and updates will be posted at https://tinyurl.com/umuai-cb-recsys-special-issue.

- September 15, 2017 — Abstract submission
- December 1, 2017 — Initial paper submission
- March 15, 2018 — Author notification
- May 15, 2018 — Revised versions due
- July 20, 2018 — Final notification
- September 1, 2018 — Camera-ready versions due
- Spring 2019 — Publication of special issue

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