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# Third Workshop on New Trends in Content-based Recommender Systems (CBRecSys 2016)

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## ABSTRACT

While content-based recommendation has been applied successfully in many different domains, it has not seen the same level of attention as collaborative filtering techniques have. However, there are many recommendation domains and applications where content and metadata play a key role, either *in addition to* or *instead of* ratings and implicit usage data. For some domains, such as movies, the relationship between content and usage data has seen thorough investigation already, but for many other domains, such as books, news, scientific articles, and Web pages we still do not know *if* and *how* these data sources should be combined to provide the best recommendation performance. The *CBRecSys 2016* workshop provides a dedicated venue for papers dedicated to all aspects of content-based recommendation.

## 1. INTRODUCTION

Content-based recommendation has been applied successfully in many different domains [9, 7], yet it has not seen the same level of attention as collaborative filtering techniques have. In the past decade, competitions like the Netflix Prize<sup>1</sup>, CAMRA<sup>2</sup>, and the Yahoo! Music KDD Cup 2011 [8] have spurred on advances in collaborative filtering and how to utilize ratings and usage data. However, there are many recommendation domains and applications where content and metadata play a key role, either *in addition to* or *instead of* ratings and implicit usage data. For some domains, such as movies, the relationship between content and usage data has seen thorough investigation already (e.g. [10]), but for many other domains, such as books, news, scientific articles, and Web pages we still do not know *if* and *how* these data sources should be

combined to provided the best recommendation performance. Only recently have we seen the introduction of competitions that include content-based information in the recommendation process, such as CLEF NewsReel<sup>3</sup>

## 2. FORMAT, AUDIENCE AND TOPICS

The *CBRecSys 2016* workshop is the follow-up to the successful first two editions of the workshop in Silicon Valley in 2014 [4, 5] and Vienna in 2015 [1, 3], which featured interesting and high-quality programs.

*CBRecSys 2016* will be organized as a full-day workshop. After the opening keynote, the late morning session is reserved for general submissions dedicated to content-based recommendation, organized by theme with the accepted papers presented as 15-minute talks with 5 minutes for discussion. The afternoon program continues the accepted paper talks and concludes the afternoon session with a panel on the future challenges and trends of content-based recommendation with speakers from both academia and industry to make for a lively and applied discussion.

The *CBRecSys 2016* workshop aims to address this by providing a venue for papers dedicated to all aspects and new trends of content-based recommendation. This would include both recommendation in domains where textual content is abundant (e.g. books, news, scientific articles, jobs, educational resources, and Web pages) as well as dedicated comparisons and combinations of content-based techniques with collaborative filtering approaches.

### 2.1 Topics of Interest

Relevant topics of the workshop include:

- Processing and Representing Content
  - Estimating (implicit) ratings associated with text reviews
  - Opinion mining and sentiment analysis of text reviews to support content-based recommendation
  - Multilingual Content representation
  - Exploiting Deep Learning approaches for content representation

<sup>1</sup><http://www.netflixprize.com/>

<sup>2</sup><http://www.dai-labor.de/camra2010/>

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<sup>3</sup><http://www.clef-newsreel.org/>

- Exploiting semantic technologies for processing and representing content
  - Extracting user personality traits and factors from text reviews for recommendation
- Exploiting user generated contents
  - Social tag-based recommender systems
  - Mining microblogging data in content-based recommender systems
  - Exploiting Semantic Web and Linked Open Data in content-based recommender systems
  - User Profiling based on Big, Social and Linked Data
- Mining contextual data from content
  - Extraction of contextual signals from text contents for recommendation
  - Considering the time dimension in content-based recommendation
  - Mood-based recommender systems
- Addressing limitations of recommender system
  - Addressing the cold-start problem with content-based recommendation approaches
  - Increasing diversity in content-based recommendations
  - Providing novelty in content-based recommendations
- Developing novel recommendation approaches
  - Hybrid strategies combining content-based and collaborative filtering recommendations
  - Content-based approaches to cross-system and cross-domain recommendation
  - Latent factor models for content-based and hybrid recommendation

### 3. SUBMISSIONS

A total of 14 papers were submitted to the workshop, which were all reviewed by a program committee of international experts in the field.

Nine of these papers were accepted for presentation at the workshop for an acceptance rate of 64%. Several papers focus on using machine learning approaches for content-based recommendation, such as deep learning and learning-to-rank. Other papers present hybrid systems combining collaborative filtering and content-based recommendation, as well as a variety of different features, such as sentiment, temporal, and visual features. Like in previous years, some of the accepted papers focus on using semantic resources such as Linked Open Data to improve the effectiveness of content-based recommender algorithms. The nine accepted papers span a breadth of different domains, such as movies, Linked Open Data, news articles, research papers, e-commerce.

### 4. WEBSITE AND PROCEEDINGS

The workshop material (list of accepted papers, invited talk, and the workshop schedule) can be found on the CBRecSys 2016 workshop website at <http://cbrecsys2016.aau.dk>. The proceedings are published as a CEUR Workshop Proceedings volume, a link to which can be found on the workshop website. Similar to last years' workshops [2, 6], we will also look into publishing a summary of the workshop in venues like the SIGIR Forum, to increase cross-disciplinary awareness of recommender systems research.

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