

# Semantics-aware Content-based Recommender Systems

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## ABSTRACT

Content-based recommender systems (CBRS) filter very large repositories of items (books, news, music tracks, TV assets, web pages?) by analyzing items previously rated by a user and building a model of user interests, called user profile, based on the features of the items rated by that user. The user profile is then exploited to recommend new potentially relevant items.

CBRS usually use textual features to represent items and user profiles, hence they inherit the classical problems of natural language ambiguity. The ever increasing interest in semantic technologies and the availability of several open knowledge sources have fueled recent progress in the field of CBRS. Novel research works have introduced semantic techniques that shift a keyword-based representation of items and user profiles to a concept-based one.

In this talk I will focus on the main problems of CBRS, such as limited content analysis, and overspecialization, showing the current research directions for overcoming them, including

- top-down semantic approaches, based on the use of different open knowledge sources (ontologies, Wikipedia, DBpedia)
- bottom-up semantic approaches, based on the distributional hypothesis, which states that "words that occur in the same contexts tend to have similar meanings"
- cross-language recommender systems and algorithms for learning multilingual content-based profiles
- the generation of serendipitous recommendations