A HYBRID APPROACH FOR NEWS RECOMMENDER SYSTEM USING OPTIMIZATION METHODS

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ABSTRACT

There are many approaches [Felfernig et al., 2014] to build recommender system. They have their advantages and disadvantages. In this work we address the question whether it worths to use as many information as we are able to collect to build a hybrid recommender system. This work is aimed to combine multiple recommenders via optimizing their contributions to weights vectors. Results show that combining different approaches leads to rise of users' involvement.

Keywords Recommender Systems · Optimizations

1 Introduction

Nowadays recommender systems are crucial part of every service that operates with user activity. There is so many information that user needs help to find content he wants to consume.

In this paper we found that it would be great to combine all available recommenders with different weights to negotiate their weak sides.

We use **Collaborative Filtering** and **Content-Based filtering** as main approaches.

Previously there were works related to single recommendation method, but there are not many of them that combine all approaches together and optimize them.

Vocabulary:

- Rating: expression or preference
- Explicit (direct from user, e.g. rate the film)
- Implicit (inferred from user activity, e.g. stop watching movie after 5 min)
- Prediction: estimate of preference
- Recommendation: selected items for user
- Content: attributes, text, etc; everything about item
- Collaborative: using data from other users

This work aimed to prove that hybrid methods works better than single recommenders. It will fill a gap between content creators and users so it will be easier to deliver content.

Firstly we will implement all state-of-the-art solutions. Afterwards we will combine them and optimize.

Results show that combining different approaches leads to rise of users' involvement.

References

A. Felfernig, Michael Jeran, Gerald Ninaus, Florian Reinfrank, Stefan Reiterer, and Martin Stettinger. *Basic Approaches in Recommendation Systems*, pages 15–37. 12 2014. doi:10.1007/978-3-642-45135-5__2.