
A HYBRID APPROACH FOR NEWS RECOMMENDER SYSTEM USING OPTIMIZATION METHODS

A PREPRINT

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January 9, 2021

ABSTRACT

Recommender system is an essential part of any social media application. Most recommender systems now use a hybrid approach, combining collaborative filtering, content-based filtering, and other approaches. Most common problems in the field of hybrid recommenders are cold start and data sparsity [Cano, 2017]. In this paper we address the abovementioned problems by proposing a hybrid weighted news recommender system which combines different approaches.

Keywords recommender systems · content-based recommender · collaborative recommender · optimizations

1 Introduction

Recommender system is a crucial part of every application that operates with content and user activity. Enormous amount of information leads to the problem that user is not able to find relevant content.

Common approaches, such as collaborative filtering, has its own problems: cold start, scalability and data sparsity. Content-based approaches suffer from the fact that we have to somehow represent recommended item in feature space.

To be consistent during the paper we list some domain specific vocabulary with their meanings:

- Rating: expression or preference
 - explicit (direct from user, e.g. user rated film)
 - implicit (inferred from user activity, e.g. user stopped watching movie after 5 minutes)
- Prediction: estimate of preference
- Recommendation: selected items for user
- Content: attributes, text, etc; everything about item

The remainder of this paper is organized as follows:

- Section 2 describes the relevant related work
- Section 3 describes input data
- Section 4 explains our modular design and architecture
- Section 5 describes the implementation of the algorithms in a real system
- Section 6 provides tests and experiments validating our systems results
- Section 7 explains future work
- Section 8 presents conclusions

2 Related work

3 Input data

4 Overview of our approach

5 Implementation

6 Evaluation

7 Further research

8 Summary

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

References

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