News Recommenders: Real-time, Real-life Experiences

Doychin Doychev, Rachael Rafter, Aonghus Lawlor, and Barry Smyth

Insight Centre for Data Analytics,
University College Dublin Belfield, Dublin 4, Ireland.
{doychin.doychev,rachael.rafter,aonghus.lawlor,barry.smyth}@
insight-centre.org
http://www.insight-centre.org/

Abstract. *Abstract comes here*

Keywords: Keywords come here

1 Introduction

2 Related Work

Within the field of recommender systems, the problem of recommending news articles to readers has a number of unique and interesting features. In many traditional application domains of recommender systems a user profile is often available, for example: movies that have been rated or products purchased. The user must create a profile which is used to build a ratings or preference history which is associated with that user as they interact with the site and these detailed profiles then feed into the creation of personalised recommendations. In the news domain it is generally not common to have detailed user profiles, with users not often required to sign in or create profiles. It is also not common for users to rate news articles and often the only information available is implicit in the logs of the users click patterns. This presents a particular challenge for collaborative filtering methods which rely on the opinions of similar users to generate recommendations [3], [7], [5].

Further complications for collaborative filtering arise from the dynamic nature of the users and the news items themselves [4],[1]. In general, users will prefer fresher news articles, and building an accurate model of user preferences based on the items they have previously read can be difficult [2], [4]. While users may have preferred categories of news articles, or topics they are particularly interested in, these preferences are difficult to learn. User preferences change over time too, and another challenge is to provide a diverse set of interesting recommendations, accounting for known users preferences and recency and popularity of the news articles themselves [6].

Content based approaches can run into problems where some measures of similarity identify news articles which are in fact about different topics. Extracting the constantly changing distribution of topics in the news presents a

challenge [9] in addition to learning how users choices are influenced by these latent factors [8].

3 System Architecture

4 Conclusions

References

1. D Agarwal, B C Chen, P Elango, and X Wang. Personalized click shaping through lagrangian duality for online recommendation. In *Proceedings of the 35th ...*, 2012.
2. M Capelle, F Frasincar, and M Moerland. Semantics-based news recommendation. In *Proceedings of the 2nd ...*, 2012.
3. A S Das, M Datar, A Garg, and S Rajaram. Google news personalization: scalable online collaborative filtering. In *Proceedings of the 16th ...*, 2007.
4. Blaž Fortuna, Carolina Fortuna, and Dunja Mladenić. Real-Time News Recommender System. *Machine Learning and Knowledge Discovery in Databases*, 6323(Chapter 38):583–586, 2010.
5. F Garcin, K Zhou, B Faltings, and V Schickel. Personalized news recommendation based on collaborative filtering. *... of the The 2012 IEEE/WIC/ ...*, 2012.
6. L Iaquinta, M de Gemmis, P Lops, G Semeraro, M Filannino, and P Molino. Introducing Serendipity in a Content-Based Recommender System. *Audio, Transactions of the IRE Professional Group on*, pages 168–173, September 2008.
7. I Ilievski and S Roy. Personalized news recommendation based on implicit feedback. In *Proceedings of the 2013 International News ...*, 2013.
8. L Li and T Li. News recommendation via hypergraph learning: encapsulation of user behavior and news content. In *Proceedings of the sixth ACM international conference ...*, 2013.
9. Yuanhua Lv, Taesup Moon, Pranam Kolari, Zhaohui Zheng, Xuanhui Wang, and Yi Chang. Learning to model relatedness for news recommendation. *the 20th international conference*, pages 57–66, March 2011.