Tutorial Information Retrieval

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Exercise Sheet 10

Exercise 1 (RecSys Challenge, Item Models) [7 Points]

Based on the sequence-aware recommender system developed last week, we now aim to extend this system with the provided meta-information for items. For each item, you are provided with a set of keywords describing the item. The tags provided are reasonably well structured and cleaned. The goal of this exercise is to incorporate these item descriptors into the (sequential) recommendation process. Depending on your system, this information could either be directly incorporated into the recommender algorithm, extending the recommender to be a hybrid recommender combining Collaborative Filtering and Content-based recommender or in the ranking algorithm deployed.
The challenge here lies in the modeling of the information (how do we represent this information such that the recommender system is able to efficiently utilize this information for improved prediction accuracy?) Possibly, such modeling could also include giving certain features different priorities (e.g., the star rating) or computing groups of similar features that can be considered similar.
Feel free to go for any design of your liking, however, make sure to justify your decisions in your report.

Exercise 2 (RecSys Challenge 2018 Reading) [3 Points]

To get an impression of the 2018 RecSys challenge, we'll also look into one of the more simple approaches towards sequential recommendations, namely kNN-based sequential recommendations as proposed by Ludewig et al. Please read the following paper and reflect on how the proposed recommender systems works:

Malte Ludewig, Iman Kamehkhosh, Nick Landia, and Dietmar Jannach. Effective nearest-neighbor music recommendations. In *Proceedings of the ACM Recommender Systems Challenge 2018*, RecSys Challenge '18, pages 3:1–3:6, New York, NY, USA, 2018. ACM. ISBN 978-1-4503-6586-4. URL http://doi.acm.org/10.1145/3267471.3267474

You can find an overview of the 2018 RecSys Challenge results and a summary of the proposed approaches in the following paper:

Hamed Zamani, Markus Schedl, Paul Lamere, and Ching-Wei Chen. An analysis of approaches taken in the acm recsys challenge 2018 for automatic music playlist continuation. *arXiv preprint arXiv:1810.01520*, 2018. URL https://arxiv.org/pdf/1810.01520.pdf

Important: Submit your solution to OLAT and mark your solved exercises with the provided checkboxes. The deadline ends at 23:59 on the day before the discussion.