Tutorial Information Retrieval

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Exercise Sheet 9

Exercise 1 (RecSys Challenge, Sequence-Awareness) [3 Points]

Based on your analyses of last week, we now aim to develop a recommender system that is able to deal with (and model) sequential data as utilized in the RecSys challenge scenario. To get a first overview on how such sequence- or session-awareness could be implemented in a recommender system, please read the following paper by Massimo Quadrana et al.:

Massimo Quadrana, Paolo Cremonesi, and Dietmar Jannach. Sequence-aware recommender systems. *ACM Computing Surveys (CSUR)*, 51(4):66, 2018. URL https://arxiv.org/pdf/1802.08452.pdf

Please answer the following questions based on the paper:

a) *0.5 Points* How do the authors characterize the problem tackled by sequence-aware recommender systems?

b) *0.5 Points* Give a short overview of the different tasks that can be addressed by sequence-aware recommender systems.

c) *2 Points* How do the algorithms presented solve the task of computing sequence-aware recommendations? Please shortly characterize the approaches taken.

Exercise 2 (Implementation and Evaluation) [7 Points]

The goal of this exercise is that you implement a first version of your recommender system aiming to solve the RecSys challenge task. You are free to choose any recommendation approach that you consider suitable in this scenario. Also, feel free to use and adapt any library that fits your needs. Please note that up to now, we did not consider any additional meta-information regarding the items (cf. the provided `item_metadata.csv`-file). We aim to model and incorporate this information in a next step on the next sheet. However, ensure that your system allows to incorporate this information in the next stage.
Please make sure to:

- Provide a detailed description of the approach.
- Detail your design decisions and considerations.
- Tune and tweak your system!
- Thorougly investigate the strenghts and weaknesses of your appraoch by analyzing not only MRR, but also other evaluation measures whenever necessary.
- Submit your predictions to the system and state the results.

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.