Deep Learning for News Recommendation

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1 Project Overview & Goal Description

Recommender systems have become an essential part of modern on-line businesses. Due to the vast amount of information from plenty of sources around the world, a key challenge of today's websites is to engage users by recommending new items according to user preferences (context). This project focuses on the problem of news recommendation, aiming to improve the quality of the recommended articles and increase the click though rate (CTR).

Deep neural networks have been used in a variety of tasks and have shown great results, but recommender systems did not get as much attention from deep learning perspective as, for example, image analysis or speech recognition, at least until recently. In this project, we will study the work of Song et al. [1] that utilises a composition of neural networks to model both item view and user view, as well as short-term user interests. We will apply it to a news recommendation dataset (e.g. Yahoo! Front Page dataset, or similar) and compare with other methods.

2 Required Skills

Good programming skills are required.
General knowledge about neural networks and related software (e.g. Tensorflow, Keras, etc.) is a big plus.

References

[1] Yang Song, Ali Mamdouh Elkahky, and Xiaodong He, "Multi-Rate Deep Learning for Temporal Recommendation," in *Proceedings of the 39th International ACM SIGIR conference on Research and Development in Information Retrieval (SIGIR '16)*. ACM, 2016, pp. 909–912.