WEB PERSONALIZED RECOMMENDATION BASED ON ONTOLOGY EVOLUTION AND MACHINE LEARNING

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Motivation of the work

Nowadays there is a huge amount of historical data and records on the web sites that are not widely used[1].Recommender systems now are used to help users to find and select items from the huge number of products available online that lead to customer satisfaction.while the change of users behaviors and preferences leads to inaccurate in accurate recommendations and un updated users profiles[2] .

The use of deep learning will help in learning and understand knowledge to detect hidden knowledge structure. It also execute the integration between learned knowledge and the evolved knowledge (evolved ontology). As deep learning/reinforcement learning increase the speed of convergence and accuracy of the data that will be used in the ontology before and after evolution.

Thesis objectives

1. Apply different deep learning techniques to obtain the suitable technique that fit the retail dataset.

2. Detect and compare between the change of user's behaviour and user's preferences on retail over period of time.

3. Proposing a social semantic personalized recommendation model based on one of the current ontology evolution techniques to obtain an updated ontology that can be tested by current ontology reasoners in order to make new recommendations based on the new user's preferences.

Research Plan

2018
- Study the state of the art of machine learning techniques and deep learning technique
- Study the state of the art of ontology evolution approaches.
- Apply deep learning on the retail dataset.

2019
- Propose the social semantic personalized recommendation model
- Test the recommendation model before and after ontology evolution by using ontology reasoning techniques.

2020
- Evaluate and compare the results of deep learning and reinforcement learning.
- Evaluate and compare the result after testing the recommendationmodel by using ontology reasoning techniques before and after ontology evolution.
- Compare the proposed social semantic recommendation model with the current personalized recommendation model.

Next year planning

- Study the state of the art of machine learning techniques and deep learning technique
- Study the state of the art of ontology evolution approaches.
- Apply deep learning on the retail dataset.

References

[1] R. Ul Haq, 'Hybrid Recommender System towards User Satisfaction', Masters in Computer Science, University of Ottawa, 2013

[2] V.Vekariya and G.R. Kulkarni, ' Hybrid Recommender Systems: Content-Boosted Collaborative Filtering for Improved Recommendations,' Communication Systems and Network Technologies (CSNT), 2012 International Conference on , vol., no., pp.649,653, 11-13 May 2012