A Novel Connectivity-based Reinforcement Learning Algorithm for Ranking Linked Data on the Social Semantic Web

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Abstract

In social web zone, semantic web (web of data), in particular Linked Data (LD), has made it possible to link previously disconnected social datasets and services via common semantic definitions of terms (vocabularies, ontologies). In addition, semantic entities can be extracted from user-generated content items by web mining, Natural Language Processing (NLP) techniques and another Named Entity Recognition (NER) systems, and hence these content items can be connected together through common semantic definitions. In this regard, the social semantic web aims to overcome some of the essential restrictions through a combination of social web frameworks with semantic web standards, thereby creating a technology platform enabling semantically enhanced social spaces where communities and individuals participate in building distributed interoperable information. In this paper, a new ranking algorithm for LD on the social semantic web is offered, using Reinforcement Learning (RL) notions. The proposed algorithm is mapping of the connectivity-based PageRank algorithm, form web of documents to web of data with formulation of ranking as an RL problem. Experimental results demonstrate using RL concepts leads considerable improvements in PageRank ranking algorithms.
References


Index Terms

Computer Science Information Sciences
Keywords

Social Semantic Web, Reinforcement Learning; Semantic Web; LOD Dataset.