

{tag} International Journal of Computer Applications  
Foundation of Computer Science (FCS), NY, USA

[Volume 171](#)

-  
[Number 1](#)

Year of Publication: 2017

Authors:

Babak Farhadi

10.5120/ijca2017914598

{bibtex}2017914598.bib{/bibtex}

## 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, from 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

1. J. Breslin, A. Passant, and S. Decker, *The social semantic web*: Springer Science & Business Media, 2009.
2. B. Farhadi, "Enriching Subtitled YouTube Media Fragments via Utilization of the Web-Based Natural Language Processors and Efficient Semantic Video Annotations," *Global Journal of Science, Engineering and Technology*, pp. 41-54, 2013.
3. B. Farhadi, "Creating a Semantic Academic Lecture Video Search Engine via Enrichment Textual and Temporal Features of Subtitled YouTube EDU Media Fragments," *International Journal of Computer Applications*, vol. 96, pp. 13-18, 2014.
4. B. Farhadi and M. B. Ghaznavi Ghouschi, "Creating a Novel Semantic Video Search Engine through Enrichment Textual and Temporal Features of Subtitled YouTube Media Fragments," in *3rd International conference on Computer and Knowledge Engineering (ICCKE)*, 2013, pp. 70-78.
5. [Online]. Available: <http://lod-cloud.net>
6. R. Sutton and A. Barto, "Reinforcement Learning: An Introduction, MIT Press," ed, 1998.
7. G. Salton, "The SMART retrieval system—experiments in automatic document processing," 1971.
8. R. Blanco, P. Mika, and S. Vigna, "Effective and efficient entity search in RDF data," in *The Semantic Web—ISWC 2011*, ed: Springer, 2011, pp. 83-97.
9. L. Page, S. Brin, R. Motwani, and T. Winograd, "The pagerank citation algorithm: bringing order to the web," in *7th World Wide Web Conference*, 1998.
10. J. M. Kleinberg, "Authoritative sources in a hyperlinked environment," *Journal of the ACM (JACM)*, vol. 46, pp. 604-632, 1999.
11. P. Boldi, M. Santini, and S. Vigna, "PageRank as a function of the damping factor," in *Proceedings of the 14th international conference on World Wide Web*, 2005, pp. 557-566.
12. V. Derhami, E. Khodadadian, M. Ghasemzadeh, and A. M. Z. Bidoki, "Applying reinforcement learning for web pages ranking algorithms," *Applied Soft Computing*, vol. 13, pp. 1686-1692, 2013.
13. S. Berger Henengouwen, *Engineering Numerical Analysis*, Cybered Incorporated, 1998.
14. I. Jacobs and N. Walsh, "Architecture of the world wide web," 2004.
15. S. Auer, C. Bizer, G. Kobilarov, J. Lehmann, R. Cyganiak, and Z. Ives, *Dbpedia: A nucleus for a web of open data*: Springer, 2007.
16. A. Moffat and J. Zobel, "Rank-biased precision for measurement of retrieval effectiveness," *ACM Transactions on Information Systems (TOIS)*, vol. 27, p. 2, 2008.
17. A. Dessi and M. Atzori, "A machine-learning approach to ranking RDF properties," *Future Generation Computer Systems*, 2015.
18. B. Farhadi, "NER-FL: A Novel Named Entity Recognizer of Farsi Language using the Web-Based Natural Language Processors and Semantic Annotations," *International Journal of Computer Applications*, vol. 98, 2014.

## Index Terms

Computer Science

Information Sciences

## **Keywords**

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