Proceedings of the International Workshop on Semantic Technologies meet Recommender Systems & Big Data

SeRSy 2012

co-located with the:
11th International Semantic Web Conference (ISWC 2012)

November 11, 2012, Boston, USA

Workshop Organizers and Program Chairs

Marco de Gemmis
Department of Computer Science
University of Bari Aldo Moro, Italy

Tommaso Di Noia
Electrical & Electronics Engineering Department
Politecnico of Bari, Italy

Pasquale Lops
Department of Computer Science
University of Bari Aldo Moro, Italy

Thomas Lukasiewicz
Department of Computer Science
University of Oxford, United Kingdom

Giovanni Semeraro
Department of Computer Science
University of Bari Aldo Moro, Italy

Copyright © 2012 for the individual papers by the papers' authors. Copying permitted only for private and academic purposes.

This volume is published and copyrighted by:

Marco de Gemmis
Tommaso Di Noia
Pasquale Lops
Thomas Lukasiewicz
Giovanni Semeraro

This volume appeared online as CEUR-WS.org/Vol-919 at CEUR Workshop Proceedings, ISSN 1613-0073

Preface

These are the proceedings of the *First Workshop on Semantic Technologies meet Recommender Systems & Big Data (SeRSy 2012)*, held in conjunction with the *11th International Semantic Web Conference (ISWC 2012)*.

People generally need more and more advanced tools that go beyond those implementing the canonical search paradigm for seeking relevant information. A new search paradigm is emerging, where the user perspective is completely reversed: *from finding to being found*.

Recommender Systems may help to support this new perspective, because they have the effect of pushing relevant objects, selected from a large space of possible options, to potentially interested users. To achieve this result, recommendation techniques generally rely on data referring to three kinds of objects: users, items and their relations. The widespread success of Semantic Web techniques, creating a Web of interoperable and machine readable data, can be also beneficial for recommender systems. Indeed, more and more semantic data are published following the Linked Data principles, that enable to set up links between objects in different data sources, by connecting information in a single global data space – the Web of Data. Today, the Web of Data includes different types of knowledge represented in a homogeneous form – sedimentary one (encyclopedic, cultural, linguistic, common-sense, …) and real-time one (news, data streams, …). This data might be useful to interlink diverse information about users, items, and their relations and implement reasoning mechanisms that can support and improve the recommendation process.

The challenge is to investigate whether and how this large amount of wide-coverage and linked semantic knowledge can significantly improve the search process in those tasks that cannot be solved merely through a straightforward matching of queries and documents. Such tasks involve finding information from large document collections, categorizing and understanding that information, and producing some product, such as an actionable decision. Examples of such tasks include understanding a health problem in order to make a medical decision, or simply deciding which laptop to buy. Recommender systems support users exactly in those complex tasks.

The primary goal of the workshop is to showcase cutting edge research in the intersection of semantic technologies and recommender systems, by taking the best of the two worlds. This combination may provide the Semantic Web community with important real-world scenarios where its potential can be effectively exploited into systems performing complex tasks.

We wish to thank all authors who submitted papers and all workshop participants for fruitful discussions. We would like to thank the program committee members and external referees for their timely expertise in carefully reviewing the submissions. We would also like to thank our invited speaker Ora Lassila for his interesting and stimulating talk.

October 2012

The Workshop Chairs
Marco de Gemmis
Tommaso Di Noia
Pasquale Lops
Thomas Lukasiewicz
Giovanni Semeraro

Program Committee

Fabian Abel	L3S Research Centre – Germany
Claudio Bartolini	HP Labs @ Palo Alto – USA
Marco Brambilla	Politecnico di Milano – Italy
Andrea Calì	Birkbeck, University of London – UK
Ivan Cantador	Universidad Autónoma de Madrid – Spain
Pablo Castells	Universidad Autónoma de Madrid – Spain
Federica Cena	University of Turin – Italy
Bettina Fazzinga	Università della Calabria – Italy
Tim Furche	University of Oxford – UK
Nicola Henze	Leibniz Universität Hannover – Germany
Dominikus Heckmann	DFKI – Germany
Leo Iaquinta	Univ. di Milano Bicocca – Italy
Roberto Mirizzi	HP Labs @ Palo Alto – USA
Ahsan Morshed	CSIRO – Australia
Enrico Motta	Open University in Milton Keynes – UK
Cataldo Musto	Università di Bari "Aldo Moro" – Italy
Fedelucio Narducci	Univ. di Milano Bicocca – Italy
Vito Claudio Ostuni	Politecnico of Bari – Italy
Alexandre Passant	seevl.net – Ireland
Gerardo I. Simari	University of Oxford – UK
Markus Zanker	Alpen–Adria–Universität Klagenfurt – Austria

Table of Contents

Link Prediction in Multi-relational Graphs using Additive Models. 1-12
Xueyan Jiang, Volker Tresp, Yi Huang and Maximilian Nickel

Driver Recommendations of POIs using a Semantic Content-based Approach. 13-24
Rahul Parundekar and Kentaro Oguchi

Semantic Network-driven News Recommender Systems: a Celebrity Gossip Use Case. 25-36
Marco Fossati, Claudio Giuliano and Giovanni Tummarello

Cinemappy: a Context-aware Mobile App for Movie Recommendations boosted by DBpedia. 37-48
Vito Claudio Ostuni, Tommaso Di Noia, Roberto Mirizzi, Romito Davide and Eugenio Di Sciascio

Ontology-based Rules for Recommender Systems. 49-60
Jeremy Debattista, Simon Scerri, Ismael Rivera and Siegfried Handschuh

Ontology-centric Decision Support. 61-72
Marco Rospocher and Luciano Serafini

RING: A Context Ontology for Communication Channel Rule-based Recommender System. 73-82
Miguel Lagares Lemos, Daniel Villanueva Vasquez, Mateusz Radzimski, Angel Lagares Lemos and Juan Miguel Gómez-Berbís