Semantic and Web: The Semantic Part

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ABSTRACT

The Web is everywhere in daily life. Business is not possible any more without the fast communication through the web. The knowledge of the humans is reflected in the information accessible in the web. New challenges occur with the flood of information and electronic possibilities for the human being. The current World Wide Web enables an easy, instant access to a vast amount of online information. However, the content in the Web is typically for human consumption, and is not tailored to be machine-processed. The Semantic Web, which is intended to establish a machine-understandable web, thereby offers a promising and potential solution to mining and analyzing web content. The Semantic Web is currently changing from an emergent trend to a technology used in complex real-world applications. This part of the special issue "Semantic and Web" especially investigates how semantic technologies can help the human being to open the new possibilities of the web. The papers, which contribute more to Web technologies, are published in Open Journal of Web Technologies (OJWT).

TYPE OF PAPER AND KEYWORDS

Editorial: *Semantic Web, Web Technologies, OJSW, OJWT, RonPub*

1 INTRODUCTION

Web standards and technologies are inherently connected to the Semantic Web: The language family of the Semantic Web is grounded on Web standards; Semantic Web applications and tools are typically integrated in the distributed web environment. The development of Semantic technologies aims at enabling a machine-processable web. Hence it makes sense to investigate the coexistence of the Web and the Semantic Web and how Semantic Web and Web technologies cooperate and complement each other.

In order to reach the communities of the Semantic Web *and* the Web, we decided to have a joint special issue in two related journals – the Open Journal of the Semantic Web (OJSW) [6] and the Open Journal of Web Technologies (OJWT) [7], which are open access, peer-reviewed, academic journals published by RonPub [8]. This guest editorial especially deals with those papers having the Semantic Web as main focus. We introduce the accepted papers with Web focus in another guest editorial [2] published in OJWT [7]. In [2], we additionally describe the rationale of choosing these journals for our special issue and our review procedure in detail.

2 CONTENT OF THIS SPECIAL ISSUE

We accepted four papers for this special issue: [4] and [5] have a strong contribution to the Web community

and are hence introduced in [2]. [1] and [3] are more related to the Semantic Web. We will shortly summarize them in the following paragraphs:

"BEAUFORD: A Benchmark for Evaluation of Formalisation of Definitions in OWL" [1]: Adding formal expressions of concepts to a given ontology improves the quality of reasoning – either by inferring more useful facts or by detecting inconsistencies in the given ontology. The authors introduce a benchmark called BEAUFORD for methods which aim to provide formal expressions of concepts using the natural language (NL) definition of these concepts. The authors face and solve new challenges in this context especially for the ambiguity of the natural language without losing preciseness in the metrics for measuring the efficiency of methods of formalization.

"Distributed Join Approaches for W3C-Conform SPARQL Endpoints" [3]: Currently many SPARQL endpoints offering to execute queries sent over the internet are freely available and accessible without any costs to users. Whenever several datasets (locally and those residing in SPARQL endpoints) need to be combined, distributed join approaches can decrease especially network costs. The authors provide an overview of the various possibilities of distributed join processing in SPARQL endpoints. They also introduce advanced new distributed join approaches and compare them and existing ones in an extensive experimental evaluation. Since a co-author of this paper is one of the guest editors of the issue, the review process was handled at a higher level by RonPub Editorial Office, who selected the reviewers and requested the reviews; and the other guest editor, who analyzed the received comments and suggested a decision to the Editorial Office.

We wish our readers enjoyment when reading our selection of papers in the addressed research area of Semantic and Web.

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AUTHOR BIOGRAPHIES

Dr. Sven Groppe earned his diploma degree in Informatik (Computer Science) in 2002 and his Doctor degree in 2005 from the University of Paderborn. He earned his habilitation degree in 2011 from the University of Lubeck. He worked in the European projects B2B-ECOM, MEMPHIS, ASG and TripCom. He was a member of the DAWG W3C Working Group, which developed SPARQL. He was the project leader of the DFG project LUPOSDATE, an open-source Semantic Web database, and one of the project leaders of two research projects, which research on FPGA acceleration of relational and Semantic Web databases. He is also the workshop chair of Semantic Big Data (SBD 2016), which is affiliated with the ACM SIGMOD 2016 conference. His research interests include databases, Semantic Web, query and rule processing and optimization, Cloud Computing, peer-to-peer (P2P) networks, Internet of Things, data visualization and visual query languages.

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