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Editorial

The Semantic Web Challenge, 2010

The Semantic Web Challenge¹ has been organized in cooperation with the The Semantic Web Science Association (SWSA) since 2003 with the aim of showcasing the best Semantic Web Applications currently being developed. The challenge not only illustrates what the Semantic Web can provide to the world, but also stimulates state-of-the-art research by enabling researchers to publicize their work to a wide and diverse audience and to compare it with the most recent work in the field. All submissions are evaluated rigorously by a jury composed of leading scientists and experts from industry in a three-round knockout competition, according to a comprehensive set of challenge requirements. In the second round, the eight best submissions are chosen based on their presentation as a poster and demonstration. In the final round, the winners are picked after oral presentations and further live demonstrations.

The Semantic Web Challenge 2010 took place at the 9th International Semantic Web Conference held in Shanghai, China from 7 to 11 November, 2010. As in previous years, the challenge consisted of two tracks: the Open Track and the Billion Triples Track. The Open Track requires that applications are designed to operate in an open Web environment and that they utilize the semantics of the data which they process, whilst the Billion Triples Track focuses on dealing with very large amounts of RDF data, which has been crawled from the Web and thus exhibits characteristics such as vocabulary heterogeneity and varying data quality. For the 2010 challenge, we provided the participants of the Billion Triples Track with an RDF data set consisting of 3.2 billion triples. We are very grateful to Andreas Harth for the enormous effort he put into crawling the web to compile this dataset, and to the Karlsruhe Institut für Technologie which provided the necessary hardware for this labour-intensive task.

The Semantic Web Challenge 2010 received 18 submissions (14 for the Open Track and 4 for the Billion Triples Track). In this special issue, we present articles about the winning systems: the three award-winners in the Open Track and the winner of the Billion Triples Track.

The first place winners of the 2010 Open Track were the team from Stanford University, comprising of Clement Jonquet, Paele-Pendu, Sean M. Falconer, Adrien Coulet, Natalya F. Noy, Mark A. Musen, and Nigam H. Shah for "NCBO Resource Index: Ontology-Based Search and Mining of Biomedical Resources". Their entry provides very clear benefits to the biomedical community, bringing together knowledge from many different sources on the web with a large corpus of scientific literature through the clever application of Semantic Web technologies and principles.

The second prize in the Open Track was awarded to the team from Rensselaer Polytechnic Institute, comprising Dominic DiFranzo, Li Ding, John S. Erickson, Xian Li, Tim Lebo, James Michaelis, Alvaro Graves, Gregory Todd Williams, Jin GuangZheng, Johanna Flores, Zhenning Shangguan, Gino Gervasio, Deborah L. McGuinness and Jim Hendler, for the development of "TWC LOGD: A Portal for Linking Open Government Data" – a massive semantic effort in opening up and linking public US government data, and providing the ecosystem and education for using this data in different contexts. The third prize in the 2010 Open Track was won by a combined team from the Karlsruhe Institute of Technology, Oxford University and the University of Southern California comprising of Denny Vrandečić, Varun Ratnakar, Markus Krötzsch, and Yolanda Gil for their entry "Shortipedia" – a Web-based knowledge repository and collaborative curating system, pulling together a growing number of sources in order to provide a comprehensive, multilingual and diversified view on entities of interest – a kind of "Wikipedia on steroids".

The Billion Triples Track was won by "Creating void Descriptions for Web-scale Data" by Christoph Böhm, Johannes Lorey, Dandy Fenz, Eyk Kny, Matthias Pohl, Felix Naumann from Hasso Plattner Institute in Potsdam, Germany. This entry uses state of the art parallelization techniques, and some serious cloud computing power, to dissect the enormous Billion Triples dataset into topic-specific views.

These four papers demonstrate the diversity of ways in which Semantic Web data can be used, and represent some of the best applications developed in the research community, combining a wide range of technologies with clear use cases and well-designed interfaces.

We would like to thank all the members of the jury for their extraordinary commitment and their detailed judgment of the strengths and weaknesses of the submitted applications.

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¹ <http://challenge.semanticweb.org>