

Editorial

Selected papers from the combined EKAW 2014 and Semantic Web journal track

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Knowledge on the Web, and in society in general, is diverse: it is multi-cultural, multi-thematic, multi-perspective, multi-medial, multi-dimensional, and distributed over time, space, and various contexts. This offers rich opportunities to gain a better and more holistic understanding of complex processes, both physical and social, which require analysis of many of these sources in integrative ways.

EKAW 2014, the 19th International Conference on Knowledge Engineering and Knowledge Management, held in November 2014 in Linköping, Sweden, put a particular emphasis on the heterogeneity in the nature and usage of knowledge. This special issue collects extended full papers from this conference that investigate novel knowledge engineering and management methods for constructing, extracting, visualizing, reusing, and integrating data in its various forms and provenances.

The scientific program of EKAW 2014 was organized by Eero Hyvonen from Aalto University, Finland and Patrick Lambrix from Linköping University, Sweden, as general chairs and Krzysztof Janowicz from the University of California, Santa Barbara, USA, and Stefan Schlobach from the Vrije Universiteit Amsterdam, The Netherlands as program chairs.

EKAW 2014 had two parallel submission tracks: a conference only submission, for which proceedings were published in 2014, and a special journal track. With its open and transparent reviewing this journal track followed the Semantic Web journal's publishing model. All in all 32% of the 168 submissions were to this journal track and merely 7 papers were in the end invited to extend their conference papers

toward a full journal paper. These selected papers had then to undergo at least one more round of reviews.

The paper *Distantly Supervised Web Relation Extraction for Knowledge Base Population*, written by Isabelle Augenstein, Diana Maynard and Fabio Ciravegna investigates relation extraction from the Web using distant supervision, in particular addressing some core issues of this approach, namely sparsity, noise and ambiguity.

In their paper *From hyperlinks to Semantic Web properties using Open Knowledge Extraction* Valentina Presutti, Andrea Giovanni Nuzzolese, Sergio Consoli, Diego Regorgiato Recupero and Aldo Gangemi base their extraction method on existing hyperlinks on the Web and focus on the sentences that surround these links for building semantic relations.

While crowdsourcing has now become a standard tool in knowledge engineering, e.g. for evaluation as in the previous paper, it is still cumbersome to be integrated in the standard work-flow of knowledge engineers. The paper *Crowd-based Ontology Engineering with the uComp Protégé Plugin* by Gerhard Wohlgenannt, Marta Sabou and Florian Hanika introduces a plug-in for Protégé, and describes an extensive evaluation on a number of engineering tasks.

Another Protégé plug-in is described in the paper *Visualizing Ontologies with VOWL* by Steffen Lohmann, Stefan Negru, Florian Haag and Thomas Ertl, which describes two implementations of the visual language VOWL, or Visual Notation for OWL Ontologies. The systems and approach are validated with user-studies and interviews.

In order to improve re-use and combination of clinical knowledge Veruska Carretta Zamborlini, Rinke Hoekstra, Marcos da Silveira, Cedric Pruski, Annette ten Teije and Frank van Harmelen developed a model for inferring interactions between recommendations in guidelines in their paper *Inferring Recommendation Interactions in Clinical Guidelines*.

Anila Sahar Butt, Armin Haller and Lexing Xie address the problem of finding concepts in ontologies in their paper *DWRank: Learning Concept Ranking for Ontology Search*. They apply a two-stage approach, first ranking concepts based on graph properties and then using Learning to Rank approach to learn feature weights.

In the paper *Quality-Based Model for Effective and Robust Multi-User Pay-As-You-Go Ontology Matching* by Isabel Cruz, Francesco Loprete, Matteo Palmonari, Cosmin Stroe and Aynaz Taheri, the authors describe

their approach to minimizing user-interaction and improve robustness in multi-user feedback systems for ontology matching.

In our view, those papers nicely reflect the overarching theme for EKAW 2014 which was *Diversity*. The authors address issues as various as Ontology Matching, Concept Ranking, Ontology Visualization, and Knowledge Extraction. Still there are also common elements, such as an interaction between human and machine knowledge, e.g., through crowd-sourcing, distant supervision, or feedback systems. There are also two papers on Information and Knowledge Extraction. All in all, we believe that this special issue represents the current strength of the Knowledge Engineering community, with its breadth of applied methods as various as learning, modeling, graph analytics, statistical methods, or interviewing techniques, without losing out on a solid grounding by (empirical) evaluation.