Ontology Alignment and the Two DLs
(Abstract of Invited Talk)[*]

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The Ontology Matching community has been very active since the first steps of the Semantic Web. The Ontology Alignment Evaluation Initiative (OAEI) has been running annually since 2004.[1] The objective of the OAEI is to perform a systematic evaluation of ontology matching systems to conduct a comparison on the same basis and to enable the reproducibility of the results. The OAEI 2020 included 12 tracks of different nature and in a diverse set of domains, each of them including one or more matching tasks [1].

Despite the amazing evaluation and system development efforts around the Ontology Matching community, there are still several challenges that need to be tackled from both the evaluation and system sides: *(i)* better connection with real-world needs and user satisfaction, *(ii)* discovery of mappings beyond atomic subsumption and equivalence, *(iii)* combination with machine learning methods, and *(iv)* awareness of the logical compatibility of the ontologies.

In the presentation I will give an overview of the OAEI and the above challenges with a special focus on challenges *(iii)* and *(iv)*, *i.e.*, the two DLs (Deep Learning and Description Logics). While Deep Learning techniques are introducing elegant solutions with promising results [2], the Ontology Matching community should not forget about the need of computing alignment sets that preserve the logical consistency (possibly with only intended entailments) of the integrated ontology (assuming that the alignment is interpreted as a set of Description Logic axioms) [3,4].

References

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[1] OAEI campaign: http://oaei.ontologymatching.org/