REPORT ON THE REASONING WEB SUMMER SCHOOL 2011

The 7th Reasoning Web Summer School 2011 was held from August 23-27, 2011 in Galway, Ireland with the strong support of Cost Action IC0801.

The Reasoning Web Summer School has become a well-established event in the area of applications of reasoning techniques on the Web both targeting scientific discourse of established researchers and attracting young researchers to this emerging field. After the previous successful editions in Malta (2005), Lisbon (2006), Dresden (2007 and 2010), Venice (2008), and Bressanone-Brixen (2009), this year's edition moved to the west of Ireland, hosted by the Digital Enterprise Research Institute (DERI) at the National University of Ireland, Galway. By co-locating this year's summer school with the 5th International Conference on Web Reasoning and Rule Systems (RR2011)[1] we have promoted interaction between researchers, practitioners and students and created additional synergies with the Semantic Web Reasoning community for the cost Action.

The 2011 school programme focused around the central topic of applications of Reasoning for the emerging "Web of Data", also in particular, taking aspects of Agreement Technologies, such as Trust and Security into account, with twelve lectures. Along with the lecture slides available on summer school's Web page[1] the chapters in a book published under Springer's LNCS series provide educational material and references for further reading. The excellent overview articles provided by the lecturers not only serve as accompanying material for the students of the summer school itself, but the book that also provides the general reader an entry point to various topics related to reasoning over Web Data. The first four lectures were devoted to foundational topics, providing introductory material to the Resource Description Framework (RDF) and Linked Data principles, Description Logics as a foundation of the Web Ontology Language (OWL), the query language SPARQL and its usage together with OWL, as well as Database foundations relevant to efficient and scalable RDF processing. Based on these foundations, the next lecture presented approaches for scalable OWL reasoning over Linked Data, whereafter the following two lectures introduced rules and logic programming techniques relevant for Web reasoning and particularly the combination of rule-based reasoning with OWL. The next lecture took a closer look at models for the Web of data. The important issue of trust management methodologies for the Web was next presented by Denis Trcek, also from the Agreement Technologies network. The next two lectures continued on non-standard reasoning methods for the Semantic Web, discussing application of inductive reasoning methods for the Semantic Web (also applied in software analysis), whereas as well as presenting an approach that combines logical and probabilistic reasoning for Web data integration. The school closed with a lecture on constraint programming and combinatorial optimization (given by the colleagues from Cork (Barry O'Sullivan, National Representative COST Action IC0602 (Algorithmic Decision Theory).

Apart from the European COST Action IC0801, further sponsors were the European FP7 project LOD2, the Artificial Intelligence Journal (AIJ), as well as our industry sponsors Alcatel-Lucent, IOS Press, Siemens AG, Skytec AG, Storm Technology, and the Office of Naval Research Global (ONRG).

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[1] **http://reasoningweb.org/2011/**