

Cognitively-inspired Heuristic Reasoning for Scalable Semantic Web Reasoning

G.Tagni

August 17, 2009

Abstract of the Talk

With the increase in the amount of data published in the Web an important subject of interest that has recently gained momentum in the Semantic Web community is how to provide scalable reasoning techniques to support the type of Web applications normally found in the Web, such as information search, data integration, personalization and query answering, among others. In practice, the Semantic Web requires reasoning under constraints and limited resources such as time, knowledge and storage. These circumstances are somehow similar to the conditions under which humans normally make decisions and solve problems. In the field of Cognitive Psychology, heuristics are seen as essential and powerful cognitive tools that enable humans (or artificial systems) to make reasonable decisions and inferences and behave adaptively in the environment. Their beauty as tools of reasoning comes from their simplicity, which is due to their ability to exploit the structure of information in the environment and evolved human capacities. Several cognitive heuristics have been developed and studied in different domains, including the recognition heuristic, take-the-best and take-the-first heuristics and the fluency heuristic, among others. In my seminar talk I will introduce my research on cognitively-inspired heuristic reasoning and discuss how cognitive heuristics can support scalable semantic Web reasoning and present my ongoing works on heuristic and stopping rules.