Invited Address:

Automated Analysis of Reasoning and Argumentation Structures in Texts

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Abstract. In many application areas of intelligent systems, natural language communication is considered a major source for substantial progress, even for systems whose pure reasoning capabilities are exceptional. Unfortunately, it turns out to be extremely difficult to build adequate natural language processing facilities for the interaction with such systems.

In this talk, I will expose some fundamental reasons for the difficulties associated with automatically analysing such inference-rich discourse, by elaborating discrepancies between effective human argumentation and efficient machine-based argumentative reasoning. On the human side, these discrepancies manifest themselves in several degrees of explicitness and levels of granularity, concise but ambiguous rhetorical signals, and varying conceptual perspectives, which all need to be related to uniform and fully explicit representations on the side of a machine. I will discuss approaches that aim at bridging these discrepancies to some degree, for both analysis and generation of argumentative texts. Issues addressed include disambiguation methods for discourse markers, identification of expected arguments, and dedicated content planning and structuring techniques.

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