GUEST EDITORIAL PREFACE

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With the emergence of autonomous intelligent agents, multi-agent systems and advances in computational logic, Argumentation has become an important research topic in Artificial Intelligence (AI) in itself and applied research directed toward a number of different domains such as law, medicine and engineering (Rahwan & Simari, 2009). Many AI oriented argumentation theories are focused on argumentation as a methodical process of logical reasoning, in which conclusions are drawn from credible reasons. The dialectical meaning of argumentation, namely as a debate, negotiation, or discussion in the form of a dialogue ,in which reasons are advanced for and against some controversial proposition or proposal, is another primary concern of the AI view of argumentation. Ideally, the construction of logical reasons for a conclusion is based on facts or generally accepted premises or principles. An adequate logical theory of argumentation should therefore be conceived to deal with assumptions, uncertain premises, incomplete evidence or defeasible statements, from which more or less credible logical arguments are constructed (Bench-Capon & Dunne, 2007) A number of theories and implementations, based on informal, classical (Besnard & Hunter, 2008) or non-monotonic logic (Dung, 1995) to allow for defeasible argumentation where new evidence undercuts previous reasoning. A core consideration in Argumentation is the representation of an argument which make take on distinctive forms but at its core are a set reasons (premises) are advanced for and against some claim, proposition or proposal (conclusion). The various stereotypical representations from argument are referred to as argumentation schemes, so that an arguments are seen as instances of argument schemes. Walton et al. (2008) catalogue numerous forms of argumentative schemes. Each scheme has a distinctive set of premises and a distinctive conclusion, and schemes represent form of reasoning we are familiar with in everyday thinking and arguing. Associated with argumentation schemes are various diagrammatic representations, based on the structural model for argumentation initially proposed by Toulmin (1958). Deriving argumentations based on text is a novel field in the process of argument extraction and argumentation mining (Green, 2009, Sant-Dizier, 2012; Palau & Moens, 2011), although how best to address is still an active field of research and is often domain dependent. Argumentation mining aims to automatically detect, classify and structure argumentation in text. Research in Computational Linguistics and in particular the analysis of discourse lends itself to argumentative text analysis. One prominent theory in the regard is rhetorical structure theory (RST) where the central concept relates to the derivation of coherence relations based on the principle that adjacent spans of text may stand in a semantic or pragmatic relationship to one another.

The focus of this special issue on "Natural Language Based Argumentation" is on the theoretical and practical considerations in being able to base argumentation directly on an analysis either a dialectal or non-dialectical form of text. Six papers were accepted after a rigorous review process. Certain papers have concentrated on need in advances in the theory of argumentation and consider current weaknesses to allow for natural language based analysis. Other papers have

allowed for how the field of Computational Linguistics particularly with respect to discourse analysis could be extended to better support Argumentation.

Girle and McKeown-Green consider the issue of questions in dialogue. They propose that to capture the conditions for correct reasoning involving questions might require a semantics that treats question-answer pairs as values. They propose a framework that allows for inferential patterns involving interrogatives or imperatives. In preparing dialogue for formal analysis, a system of reasoning must be alert to the pragmatic properties of linguistic utterances, rather than merely to the syntactic and semantic properties of linguistic expressions asserting, asking, requesting, persuading and commanding are just some among the types of illocutionary acts that we might distinguish in dialogue, in order to give us a feel for the different things that can be done with words and other signs.

Amgoud and Prade consider work of argumentation from the perspective of linguists. Linguists define the notion of argument by making explicit two functions: a function of conclusion and a function of reason. They have shown that the formal definition captures only one argumentative form among the four proposed by linguists. As a side effect, the different modes of counter-argumentation cannot all be captured.

Walton provides an overview of argumentation schemes that are applicable to argumentation extraction. The author presents examples that demonstrate what is necessary in order to reach the point where these schemes can be implemented computationally. A few of these schemes are examined in more detail.

Garcia-Villalba and Saint-Dizier show that within the context of opinion expression, a number of evaluative expressions, can be are interpreted as arguments by showing that expression in combination with discourse relations within RST may also be interpreted as an argument with a conclusion or one or more supports. They show how an automatic recognition of these structures can be implemented in the Dislog programming language on the TextCoop platform, dedicated to discourse analysis

Mulkar-Mehta considers the importance of granularity relations for language understanding and formalization, where granularity is the concept of breaking down an event into smaller parts or granules such that each individual granule plays a part in the higher level event. The author proposes a model and annotation scheme for granularity.

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