ON THE NEED OF KNOWLEDGE FOR COMPUTATIONAL ARGUMENT ANALYSIS AND GENERATION

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Argumentation is deeply grounded in human society and communication. While formal argumentation has been studied for decades in philosophy and logic, only recently, computational argumentation has been established as a research field in the Natural Language Processing (NLP) community. Argumentation is a natural object of study for NLP, since arguments are framed in natural language -- be it in discourse or dialogue. At the same time, analysing or even generating arguments computationally is a challenging goal. Humans frame arguments to deliberate issues that require careful reflection and deep analysis from various views and angles. The debated issues typically involve conflicting interests that need to be weighted in terms of their impacts and consequences.

In my talk I will highlight recent work on \textit{knowledge-driven computational argument analysis} conducted in the ExpLAIN project. We perform argument analysis by integrating symbolic background knowledge with neural language processing models and show how leveraging such knowledge enhances performance and interpretability of results. We started from an empirical analysis of implicit knowledge in argumentative texts, and developed methods to integrate such knowledge in argument analysis tasks. Our work is the first to show how to combine structured and latent knowledge from pre-trained language models to perform reconstruction of implicit knowledge for argument analysis.

I will conclude by discussing avenues for moving from analysis to generative argumentation tasks, and the importance of knowledge for achieving these aims.