Inverse Problems in Argumentation – Abstract

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Abstract of Invited Talk

Formal argumentation theory has developed several models based on logical or graph-theoretical representation of arguments and relations among arguments. Some of these models also incorporate additional information, depending on the context (for example, preferences over arguments or values assigned to arguments, weights reflecting the credibility of the source stating the argument). The objective is to perform various reasoning tasks (in particular, assign acceptability status to arguments, or, in a different perspective, rank them). This is done thanks to a reasoning machinery which can also to some extent be parametrized by the designer. We are thus dealing with families of argumentation models.

In the inverse perspective, the idea is to start from argumentative 'observations' (partially specified argumentation frameworks, sets of acceptable arguments, scores or ranking over arguments, to cite a few examples) and seek to identify the model and/or parameters these observations can result from. Recently, several papers have discussed related notions ('realizability', 'rationalisation', 'synthese', 'inference', ...), making different assumptions regarding the underlying model or regarding the observations taken as input.

In this talk I will present an overview of these notions and of the main results obtained in this area. I will also discuss some of the questions raised by these approaches, in particular the differences between the single agent and the multiagent settings, as well the exact nature of what we can assume to observe in such argumentative scenarios, depending on the context.

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