Strategic Argumentation with Defeasible Logics

Brian Lam

Abstract:

Argumentation is a hot topic in legal reasoning and in more general setting such as negotiation in multi-agent systems. Over the years, many dialog games for argumentation have been proposed to study the question of how conclusions are justified, or how procedures for debate and conflicts resolutions are structured to arrive a fair and justifiable outcomes. However, most of the work in this area is based on an assumption that complete information about the argument is provided, which may not be the case in reality. Agents, in most cases, can only have their own belief and may have not knowledge about other agents' belief, and cannot predict how other agents is going to attack their own argument.

In this talk, we will discuss the problem of strategic argumentation where dispute is to be done under incomplete information. We will show how dialog games can be modeled using a skeptical, non-monotonic formalism and discuss the problem of deciding what move to play at each turn is an NP-complete problem. If time permits, we might also briefly touch upon our ongoing research in argumentation and non-monotonic reasoning.