DYCODE

Collective Decision-making:
Formal Tools and Philosophical Perspectives

LECTURES Winter 2019/20

PHILOSOPHY & ECONOMICS

Computational Argumentation for Collective Decision-Making

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"Computational argumentation formalises the dialectical process of reasoning about arguments and counter-arguments, so that one can identify subsets of arguments that it is rational to collectively accept. We can use the underlying argumentation principles to structure dialogues between agents, where these agents exchange arguments in order to make joint decisions, influence one another and reach agreements. In this talk, I will present an argument dialogue system for deliberation that allows agents to reach an agreement on how to act in order to achieve some shared goal. While this is a collaborative setting, the agents each have their own subjective preferences over the possible actions, and these preferences may change as the agents share information. The dialogue system allows the agents to reach an agreement that is acceptable to each, without requiring them to resolve their differing preferences. I will compare the performance of this dialogue system with a simple consensus forming approach, and discuss some of the open challenges around the use of argument dialogues to support collective decision-making."

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