Software agents can be members of different institutions along their life; they might even belong to different institutions simultaneously. For these reasons, agents need capabilities that allow them to determine the repercussion that their actions would have within the different institutions. This association between the physical world, in which agents' interactions and actions take place, and the institutional world is defined by means of constitutive norms. Currently, the problem of how agents reason about constitutive norms has been tackled from a theoretical perspective only. Thus, there is a lack of more practical proposals that allow the development of software agents capable of reasoning about constitutive norms. In this article we propose an information model, knowledge representation and an inference mechanism to enable Belief-Desire-Intention (BDI) agents to reason about the consequences of their actions on the institutions and making decisions accordingly. Specifically, the information model, knowledge representation and inference mechanism proposed in this paper allows agents to keep track of the institutional state given that they have a physical presence in some real-world environment. Agents have a limited and not fully believable knowledge of the physical world (i.e., they are placed in an uncertain environment). Therefore, our proposal also deals with the uncertainty of the environment.
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