

Some Remarks in Decision Theory

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Abstract

Optimization is a field that branches out in many directions and raises problems that sometimes require extremely sophisticated tools. Yet its theoretical foundations remain clear: what it means to maximize a utility function, and the implications that follow from doing so, are conceptually straightforward. For almost a century, however, decision theory has also systematically studied interactive decisions, that is, situations in which there are multiple decision-makers. Here the picture changes radically: it is no longer always evident what counts as optimal, and while in some cases theory provides effective answers, in many others such answers cannot be found, perhaps because truly optimal answers simply do not exist. This difficulty also has significant consequences for the way we think.

We shall briefly discuss some of these aspects, providing also meaningful examples.