Minimizing Inaccuracy for Self-Locating Beliefs

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Abstract

One's inaccuracy for a proposition is defined as the squared difference between the truth value (1 or 0) of the proposition and the credence (or subjective probability, or degree of belief) assigned to the proposition. One should have the epistemic goal of minimizing the expected inaccuracies of one's credences. We show that the method of minimizing expected inaccuracy can be used to solve certain probability problems involving information loss and self-locating beliefs (where a self-locating belief of a temporal part of an individual is a belief about where or when that temporal part is located). We analyze the Sleeping Beauty problem, the duplication version of the Sleeping Beauty problem, and various related problems

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