

EXPERIMENTS FOR DETECTION OF WEAKNESSES IN MODELS OF UNCERTAINTY

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To address the need for efficient and unbiased experimental testing of methods for decision under uncertainty, we devise an approach for probing weaknesses of these methods by running experiments on readily available or easily obtainable databases. For illustration, we apply probabilistic and possibilistic approaches to a database of results of a domino tower competition. The experiments yielded several surprising results. First, even though a probabilistic metric of success was used, there was no significant difference between the rate of success of the probabilistic and possibilistic models. Second, the common practice of inflating uncertainty when there is little data about the random variables shifted the decision differently for the probabilistic and possibilistic models, with the latter being counter-intuitive. Finally, inflation of uncertainty proved detrimental even when very little data was available.