

Ognjanović, Zoran; Rašković, Miodrag

Some probability logics with new types of probability operators. (English) Zbl 0941.03022
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Summary: We introduce new types of probability operators of the form Q_F , where F is a recursive rational subset of $[0, 1]$. A formula $Q_F\alpha$ is satisfied in a probability model if the measure of the set of worlds that satisfy α is in F . The new operators are suitable for describing events in discrete sample spaces. We provide sound and complete axiomatic systems for a number of probability logics augmented with the Q_F -operators. We show that the new operators are not definable in languages of probability logics that have been used so far. We study decidability of the presented logics. We describe a relation of 'being more expressive' between the new probability logics.

MSC:

03B48 Probability and inductive logic

Cited in **15** Documents

Keywords:

probabilistic reasoning; completeness; probability operators; probability model; events in discrete sample spaces; probability logics; decidability

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