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A Statistical Probability Theory for a Symbolic Management of Quantified Assertions

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Abstract

In this paper we present a new approach to a symbolic treatment of quantified statements having the following form "Q A's are B's", knowing that A and B are labels denoting sets, and Q is a linguistic quantifier interpreted as a proportion evaluated in a qualitative way. Our model can be viewed as a symbolic generalization of statistical conditional probability notions as well as a symbolic generalization of the classical probabilistic operators. Our approach is founded on a symbolic finite M-valued logic in which the graduation scale of M symbolic quantifiers is translated in terms of truth degrees. Moreover, we propose symbolic inference rules allowing us to manage quantified statements.

For technical reasons, this article is stored as two separate computer files, labelled "Part I" and "Part II", respectively. Please replace the present page by a printout of the "Part II" file.