Algorithmic Statistics

Algorithmic Statistics_下载链接1_

著者:Vitanyi, Paul

出版者:Springer Verlag

出版时间:2012-6

装帧:HRD

isbn:9780387005423

Whereas Kolmogorov complexity is the accepted absolute measure of information content of an individual finite object, a similarly absolute notion is needed for the relation between an individual data sample and an individual model summarizing the information in the data ---for example, a finite set (or probability distribution) where the data sample typically came from. The statistical theory based on such relations between individual objects can be called algorithmic statistics, in contrast to classical statistical theory that deals with relations between probabilistic ensembles. 'Algorithmic Statistics' develops the algorithmic theory of statistics, sufficient statistics, and minimal sufficient statistics. This theory is based on two-part codes consisting of the code for the statistic (the model summarizing the regularity, the meaningful information, in the data) and the model-to-data code. In contrast to the situation in probabilistic statistical theory, the algorithmic relation of (minimal) sufficiency is an absolute relation between the individual model and the individual data sample. The book distinguishes implicit and explicit descriptions of the models and gives characterizations of algorithmic (Kolmogorov) minimal sufficient statistic for all data samples for both description modes--in the explicit mode under some constraints. It also strengthens and elaborates upon earlier results on the ``Kolmogorov structure function'' and ``absolutely non-stochastic objects''--those rare objects for which the

simplest models that summarize their relevant information (minimal sufficient statistics) are at least as complex as the objects themselves.

作者介绍:

目录:

Algorithmic Statistics_下载链接1_

标签

评论

Algorithmic Statistics_下载链接1_

书评

Algorithmic Statistics_下载链接1_