On Estimating the Variance of a n-independent Model Credibility Index

by
Jiawei Liu
Department of Mathematics and Statistics, Georgia State University
Atlanta, GA, 30303, USA
matjxl@langate.gsu.edu

Abstract

If viewed realistically, models under consideration are always false. There are occasions when one will still want to use a false model, provided that it gives a parsimonious and powerful description of the generating mechanism. Lindsay and Liu (2005) introduced a model credibility index, from the point of view that the model is false. The model credibility index is defined as the maximum sample size at which samples from the model and those from the true data generating mechanism are nearly indistinguishable. Estimating the model credibility index is under the framework of subsampling. Exploring the asymptotic properties of the model credibility index is associated with the problem of estimating variance of U statistics. An unbiased estimator and a simple fix-up are proposed to estimate the U statistic variance.