

Multivariate Skew-Normal/Independent Distributions: Properties and Inference

Filidor Vilca

Departamento de Estatística, Universidade Estadual de Campinas, Brasil

Abstract Liu (1996) discussed a class of robust distributions as normal/independent distributions (Andrews and Mallows, 1974; Lange and Sinsheimer, 1993), which contains a group of thick-tailed distributions. We have developed a skewed version of these distributions in the multivariate setting, and we call it multivariate skew normal/independent distributions. We derive several useful properties of these distributions. The main virtue of the members of this family of distributions is that they are easy to simulate from and they also lend themselves to a EM-type algorithm for maximum likelihood estimation. The EM-type algorithm has been discussed with emphasis on the skew-t, on the skew-slash, and on the contaminated skew-normal distributions.