

1159-62-124

Andrews Tawiah Anum*, atanum@miners.utep.edu. **Robust Statistical Inference For The Gaussian Distribution.**

The aim of robust statistics is to develop statistical procedures which are not unduly influenced by outliers or observations that are not representative of the underlying “true” data generating process. This talk focuses on an estimator with this characteristic and the function f for the divergence function is the univariate normal distribution and the parameter α is chosen between $[0,1]$. The estimator fails when we rely on the classic Newton’s method to converge to the minimum of the density power divergence (MDPD) function. There is a tendency of such estimator never to approach this minimum and thus we implement the MDPD estimator using the Gradient Descent with Armijo’s Rule. The MPDP estimator is compared to one of the most prominent competitors in the area of robust estimation, the univariate Minimum Covariance Determinant (MCD) estimator, to examine the performance of the estimator under discussion. For a real and fair comparison of the results, breakdown points for the MPDP estimator and the MCD are matched. The implementation of the MDPD estimator was efficient in the sense that taking a data set with a given number of outlying values, the numerical implementation was in correspondence with the theoretical breakdown point. (Received August 03, 2020)