

# A Robust Method (LTED) for Imputation Missing Values and Location Estimate

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**Keywords.** Robust Statistic; Missing Values; Imputation; Location Estimate.

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Estimating the mean (location) of an incomplete dataset and filling in missing values with imputed values is a common problem in data analysis. There will always be times when something goes wrong, resulting in gaps in data. Some statistical procedure will not work as well, or at all, with some data missing. Deleting an entire row implies that we lose available information for the analysis, for that reason is preferable to impute these missing values. Different approaches can be used to handle the missing values, such as Last Observation Carried Forward (LOCF), Multiple Imputations, Simple Mean Imputation, Simple Median Imputation, Expectation Maximization Algorithm Approach. But these methods can be greatly affected by the presence of outliers in the data. This paper introduces a new robust imputation method, for imputing missing values in data, Least Trimmed Euclidean Distance Imputation (LTED-IM), and finally estimating the location of the data. The method based on an iterative algorithm which use the Euclidean norm and propose a solution technique for the resulting combinatorial optimization problem, based on a necessary condition, that results in a high convergent local search algorithm. Simulation studies on a real and artificial data indicate that our proposed method outperforms existing methods in accuracy and robustness.

## References

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