
Algorithm 1: Algorithm for Jackknife Variance Estimator

$df \leftarrow n \times p$ matrix with missing observations.

df_m^i is the m^{th} imputed dataset.

df^j is the j^{th} jackknife sample with d observation dropped.

In many cases $\binom{n}{d}$ is a large value, which makes obtaining all possible jackknife subsamples infeasible. As such, an arbitrarily large number of subsamples are generated, denoted by j .

Impute df m times to obtain m complete datasets.

Imputations \leftarrow **for** 1 **to** m **do**

 | Create j jackknife subsamples from the m^{th} dataset, resulting in
 | $j \times m$ subsamples of size $n - d$

end

Point estimates \leftarrow **for** 1 **to** $j \times m$ **do**

 | Apply analysis model to **Imputations** to obtain a vector of length
 | $j \times m$ containing estimates.

end

$$\hat{\theta}_{jack} = \frac{1}{j \times m} \sum_{i=1}^{j \times m} \hat{\theta}_i \quad (1)$$

Finally, the confidence interval will take on the form

$$(\hat{\theta}^{\alpha/2}, \hat{\theta}^{1-(\alpha/2)}) \quad (2)$$

In general, $m < 5$ while $\sqrt{n} \ll d < n$ is sufficient. However, for statistics sensitive to subtle changes between the different jackknife subsamples (such as the various percentiles), values for m , d , and j should be adjusted.
