

Peer Review

Review of: "Fixed-Sized Clusters k-Means"

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The manuscript presents an interesting application of the Hungarian algorithm in solving the balancing cluster problem for the k-means algorithm. It provides a detailed mathematical explanation of the problem, as well as a clear description of how the solution is devised.

However, the manuscript lacks a thorough literature review and comparison with existing work. The author should add more work in the area of balanced k-means and also, in general, any partition-based data clustering algorithms. The performance can then be compared against those algorithms. At a minimum, the performance needs to be compared with the algorithm mentioned in the manuscript. The authors argue that some previous methods are unsuitable for larger datasets, yet they do not provide sufficient details on how their proposed approach addresses (or fails to address) this issue.

Additionally, the algorithm has worse time complexity than some existing algorithms in the literature. The authors should acknowledge and discuss this limitation.

The writing style requires significant improvement. Many terms are introduced without proper definitions, making it difficult for readers to follow. Images are not properly described. Furthermore, several mathematical equations are presented without sufficient explanation, leaving the reader to infer their meaning. A more detailed physical interpretation should be provided when presenting the algorithm.

The authors also use a randomly chosen, small dataset to demonstrate the performance of their algorithm. Instead, they should use standard clustering datasets to provide a more meaningful evaluation of its performance.

A substantial revision of the manuscript is recommended before it can be considered for publication as a peer-reviewed article.

Declarations

Potential competing interests: No potential competing interests to declare.