

Clustering as optimization

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Agustín-Blas et al. (2012) formulate the clustering problem as an optimization problem.

Questions

1. Explain the clustering problem. Give at least two real-life examples where clustering is needed. What methods have been used? Describe briefly at least two and explain their advantages and shortcomings based on the reported results.
2. Explain and implement the clustering method proposed by Agustín-Blas et al. (2012). Test the method on a numerical problem. Compare the results to those obtained by another method. What are the advantages and shortcomings based on your implementation and the results obtained?

References

Agustín-Blas, L., Salcedo-Sanz, S., Jiménez-Fernández, S., Carro-Calvo, L., Ser, J. D., and Portilla-Figueras, J. (2012). A new grouping genetic algorithm for clustering problems. *Expert Systems with Applications*, 39(10):9695–9703.