

RADDACL: A Recursive Algorithm for Clustering and Density Discovery on Non-linearly Separable Data

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Abstract—In the realm of unsupervised classification, clustering algorithms have presented themselves as being inefficient in the detection of non-linearly separable or non-spherically shaped based clusters, without utilizing complex implementations or computational expense. In clustering algorithm advancements, excellent results are produced with complex concepts and implementations. Another current downfall is that very advanced clustering algorithms proved to be computationally expensive methods. This paper presents a recursive clustering algorithm that is simple to conceptualize and implement, without sacrificing the ability to cluster the presented information. The algorithm has proven its worthiness in experiments to date. This paper explains the algorithm, named RADDACL (Recursive Algorithm for Density Discovery and CLustering), its origin, explanation and inspiration, along with preliminary testing results. With the simplicity of conceptualization and implementation, RADDACL is a prime algorithm for introduction to several topics in Computer Science education (and related fields) such as recursion, knowledge discovery, and clustering.
