Theoretical Model for Holistic Non Unique Clustering

Ramesh Chandra Bagadi, *FIE, CEng(India)*
Associate Professor & Head, Department of Civil Engineering, Sanketika Vidya Parishad Engineering College, Visakhapatnam-41, India

***Abstract*- In this research investigation, the author has presented a novel method for Holistic Non Unique Clustering.**

Index Terms- Connected Cluster

INTRODUCTION

One can refer to a ton of literature on Clustering on the World Wide Web. However, there is very little information regarding Multi Class Classification, i.e., Holistic Non Unique Clustering. In this research paper, the author presents detailed novel ideas regarding Holistic Non Unique Clustering.

THEORY (Author's Holistic Non Unique Clustering Model)

1. Firstly, we consider m number of data points each of n dimensions each. We wish to holistically cluster these points into Non Unique Clusters. By Non-Unique Cluster, we mean that one or more data points of a cluster can also belong to one or more other clusters, in this context of derivation of Holistic Non Unique Clusters for the given data points.
2. We now find the distances between each of the given data point with each other data point excluding itself. Let these be denoted by $d_{ij} = \underset{\substack{i \neq j \\ i,\ j=1 to m}}{dis\tan ce}(i, j)$. These will be $(m^2 - m)$ in number.
3. We now find all the ratios $k_{lm} = \left(\dfrac{\underset{\substack{i \neq j \\ i,\ j=1 to m}}{dis\tan ce}(i, j)}{\underset{\substack{p \neq q \\ p,\ q=1 to m}}{dis\tan ce}(p, q)} \right)$ with $i \neq p$ and $j \neq q$ simultaneously. These will be $(n^2 - 1)$ in number for each d_{ij}. Therefore, these will be $n^2(n^2 - 1)$ in number.
4. We now arrange these k_{lm} in ascending order. Let this be a vector $K_{1\times(n^4 - n^2)}$.
5. We now pick any data point, say k^{th} data point represented by k, among the m data points and find its nearest data point (distance is measured as Euclidean Distance), say $k_{nearest1}$ and find the distance between these two points. We call it $dis\tan ce(k, k_{nearest1})$.
6. For each of the k_{lm}, we now find all the data points that form a Connected Cluster within the distance $k_{lm}\{dis\tan ce(k, k_{nearest1})\}$. These will be $n^2(n^2 - 1)$ in number.
7. Similarly, we repeat finding the Clusters for the next nearest data point to the data point k as detailed in 5 and 6. We keep finding the clusters till the case for the farthest data point to point k.
8. In this fashion, we can find all the Holistic Non Unique Clusters.

REFERENCES

[1] http://vixra.org/author/ramesh_chandra_bagadi

ACKNOWLEDGEMENTS

The author would like to express his deepest gratitude to all the members of his Loving Family, Respectable Teachers, En-Dear-Able Friends, Inspiring Social Figures, Highly Esteemed Professors, Reverence Deserving Deities that have deeply contributed in the formation of the necessary scientific temperament and the social and personal outlook of the author that has resulted in the conception, preparation and authoring of this research manuscript document. The author pays his sincere tribute to all those dedicated and sincere folk of academia, industry and elsewhere who have sacrificed a lot of their structured leisure time and have painstakingly authored treatises on Science, Engineering, Mathematics, Art and Philosophy covering all the developments from time immemorial until then, in their supreme works. It is standing on such treasure of foundation of knowledge, aided with an iota of personal god-gifted creativity that the author bases his foray of wild excursions into the understanding of natural phenomenon and forms new premises and scientifically surmises plausible laws. The author strongly reiterates his sense of gratitude and infinite indebtedness to all such 'Philosophical Statesmen' that are evergreen personal librarians of Science, Art, Mathematics and Philosophy.