Correntropy Indicator

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What is Correntropy Indicator?

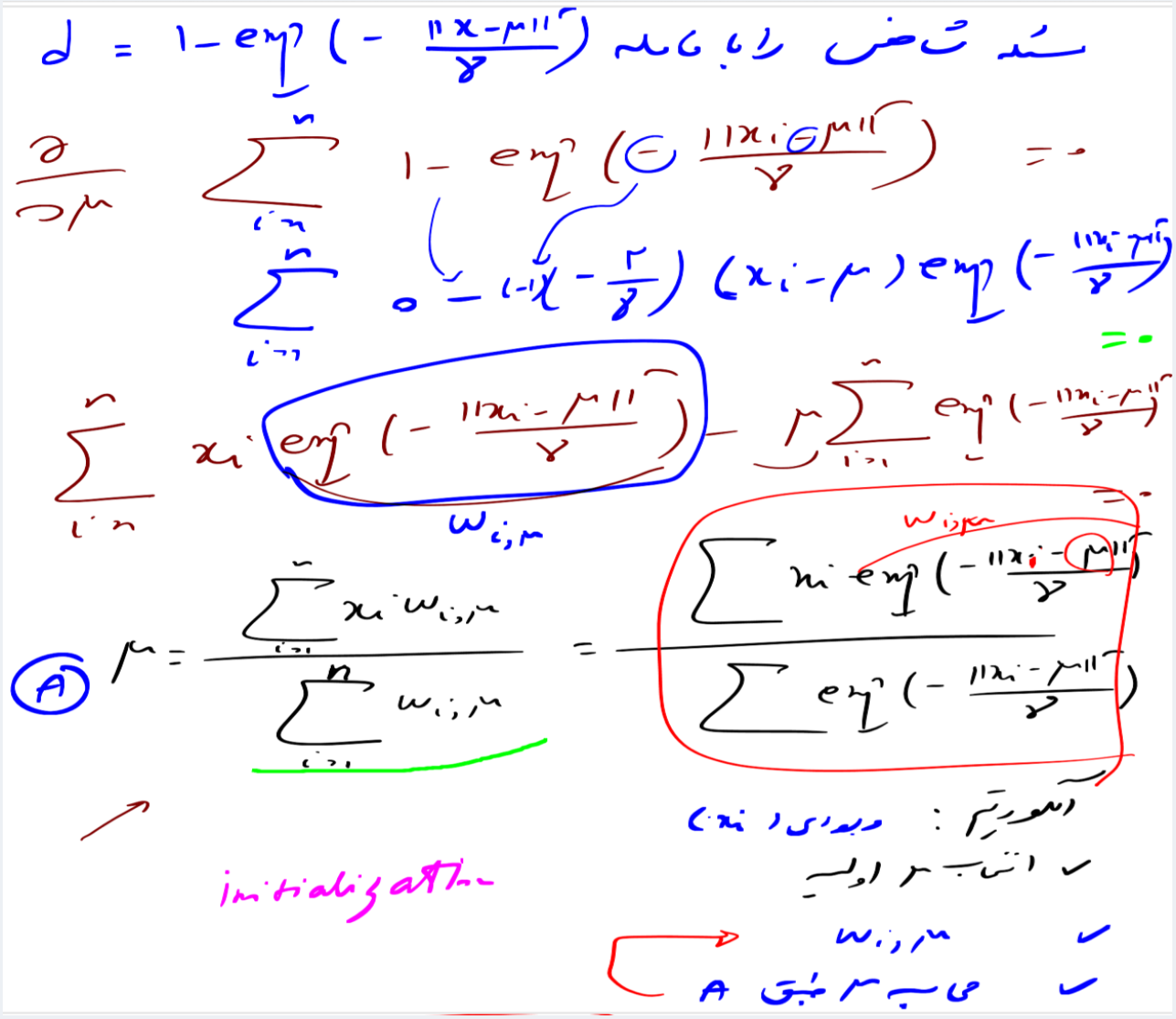
The average is normally calculated from the following formula

$$= \frac{\sum xi}{n}\mu$$

But the average is calculated using the normalized distance as follows

$$= \frac{\sum Xi\ Wi.\mu}{\sum Wi.\mu}\mu \qquad W_{i,\mu} = \frac{\exp(-|xi - m|)}{sigma}$$

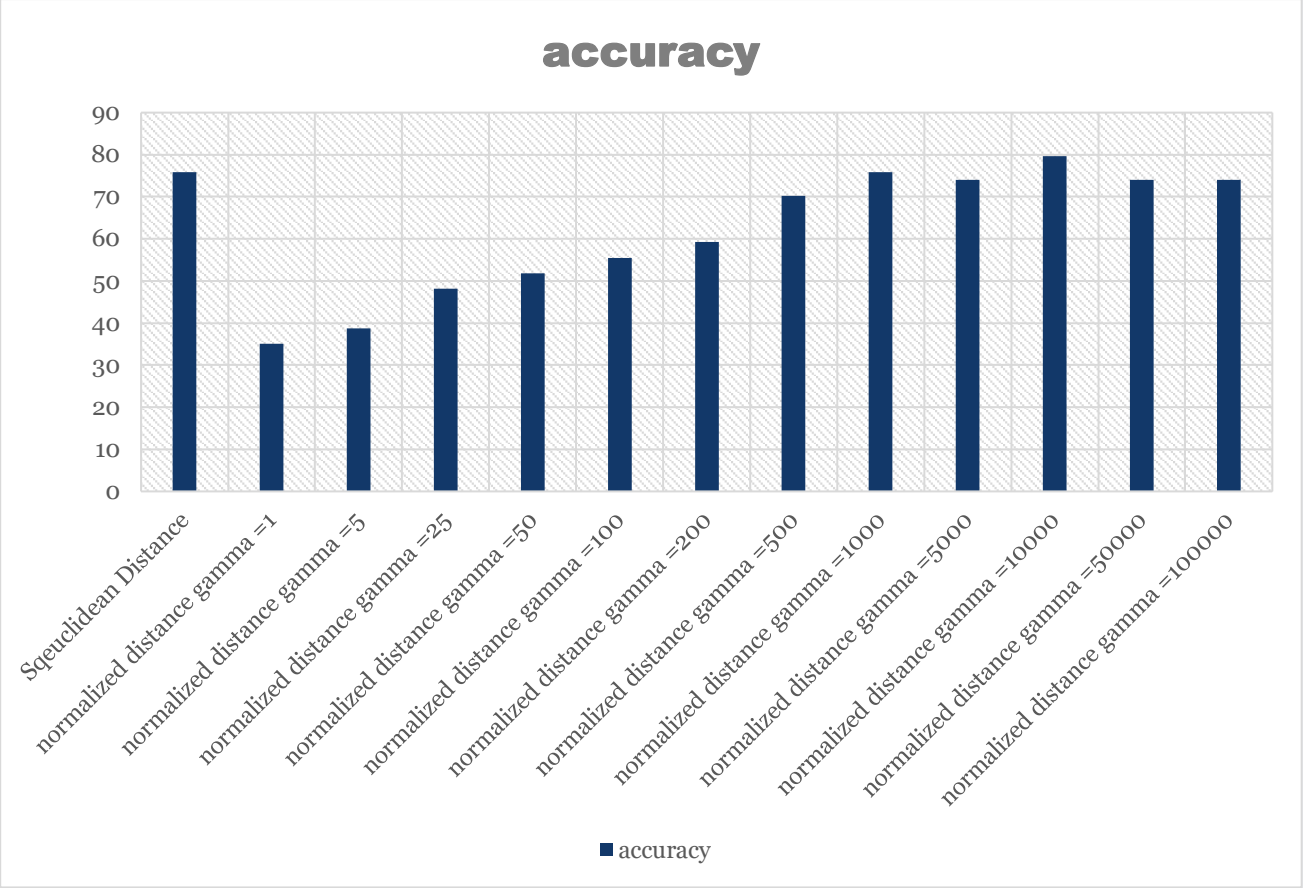
The mean calculation algorithm operates on the basis of the normalized distance in such a way that first a suitable initial value for. Is selected according to the data and their values. Then the value of w is calculated according to the value of و and finally the algorithm continues for several steps to reach the final value of it.



The Dataset : wine

Classes : 3
Samples per class : [59,71,48]
Samples total : 178
Dimensionality : 13
Features : real, positive

To examine the effect of this algorithm on clustering, the results of clustering are based on
• Average
• Average using normalized distance



We see that by changing the sigma value in the formula for calculating the normal distance, the results obtained improve depending on the type of data.

Thank you :)