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2 Cuckoo Search

Algorithm :-

Step 1 initialize the n number of nests with random solution

Step 2 Evaluate the fitness of each nest

Step 3 Calculate f(n)

n = number of nest

P_a = The probability of optimal sol^{-n}

Step 4 if the optimal sol^{-n} is better than the previous one ~~change the sol^{-n}~~ move to the nest which is having best fitness else, search for another nest in each iteration to find optimal sol^{-n}

Pseudo Code :

Intialize polpulation

For each nest n-1

end "nest ← random sol^{-n}

do

For each nest

Calculate fitness value

If the fitness value is better than the best val
set the current value as best for f(n)

~~End~~

else :

search for another sol^{-n}

End

Opt sol^{-n} ← new_sol^{-n}

Implementation in Data mining

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DM = process of discovering patterns, trends.. from large sets of data

clustering :- involves partitioning a dataset into groups based on similarity

→ Cuckoo search Approach :-

> Encoding > Fitness Function [Evaluates the clustering quality
> Search process > Termination

objective function : calculate the total distance b/w each data points & its nearest centroid

↓

It represents the 'avg' position of all data points within the cluster

It is essentially the point that minimize the total distance to all other points in the cluster