

BIS Lab.

Ants Colony Optimization.

~~There are many steps in this algorithm.~~

num. iterations = ~~100~~ 20.

num. ants = 8

num. paths = 10

for iteration in range (num. iterations):

for ant in range (num. ants):

chosen-path = random.randint (num. paths)

We initialize the best-path to some random large value.

we compare chosen-path to best-path

if chosen-path < best-path:

best-path = chosen-path.

= [initial-phormone]

phormone [chosen-path] + = phormone-increase

phormone-increase = ~~1~~ 1

phormone [chosen-path] + = phormone-increase

This increases the phormone-weight on the optimal path.

↓
Start steps
with phormone

Step 1: Initialize the parameters like num-ants, num-iterations etc..

2) Repeat for num-iterations.

3) ~~After~~ Each ant chooses a path based on the pheromone levels, with paths that have more higher pheromone levels are more likely to be selected.

4) Calculates the quality of the path, and keep updating pheromone levels and the optimal path.

5) After the iterations are done the best solution is found and that will be the final output.

If pheromone levels are initially 0, each path has equal probability at the start. Once a particular path has been found eventually pheromone levels will increase on that particular path.

If the most optimal path gets blocked, then eventually the pheromone levels on that path will decrease called pheromone evaporation and then ants will proceed to explore other paths.

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