ACO Wrapper for Feature Selection:

Input: Data<Features , Class Variable , Instances >, Number of Ants, Number of iterations.

Output: Best\_Sol <Sub set to given Features> and prediction model.

Process:

Step 1: Read the data, get the features and class variable , Number of ants, Number of Iterations.

Step 2: Initialize best\_sol to

Step 3: Initialize the pheromone trail, and .

Step 4: for each iteration:

Step 5: for each ant :

Step 6: Initialize at any of the features randomly, i.e. .

Step 7: while (More Features to Search and Best Solution Not Reached):

Step 8: Calculate information gain for each non-traversed feature using eq.1.

Step 9: Select the next feature with probability , using eq.2.

Step 10: Travel to the next feature, i.e., add feature to .

Step 11: Return the set of features traversed by , i.e., a set of selected features.

Step 12: Update the pheromone for each pair of features using eq.4.

Step 13: Update the best\_sol by comparing the so far best sol with the iteration best by using the specificity of the solutions.

Step 14: Return best\_sol and the prediction model using the best\_sol.

Eq.1.

Eq.2

Eq.3

Eq.4.