









However Ant-O algorithm proposed in this paper in a relatively short period of learning, makes search faster convergence to the optimum solution, shortens the time to learn. Compared with the Q-learning algorithm, the Ant-O introduces orderly directed and weighted graph, which is arranged on the shortest path pheromone concentration.

## 4 Conclusion

In essence KNN classification is a supervised learning method based on statistical data. Firstly, we present the general procedure of classification algorithm. There are three factors which affect classification performance, that is the number of neighbor, distance measure and decision rule. We have analyzed different Parameter of KNN, such as different distance function. Then we have summarized several important issues and recent developments of classification problems. These include building index structure to find nearest neighbor, reducing dimension of high-dimensional dataset, and being integrated into SVM or neural network. We do not discuss problems such as feature selection, dimension, class number, which are other important and difficult problem of classification. Specifically, the Option of KNN algorithm, through the combination of the ACO study method, using edge roughness find bottlenecks, makes hierarchical state space. Tasks are divided into multiple sub tasks, division of space, decrease the learning complexity, under the premise of not to affect the solution quality of the algorithm, significantly speed up the solution.

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