

Vehicle Routing Problem with Time Window

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Abstract

Vehicle routing problem with time window(VRPTW) is one of the most famous problems in operations research, it has a wide range of interest not only in academic research, but also in many real-world applications. This report will focus on introducing a clustering approach for VRPTW. Since in many cases, there will be a large scale of dataset which is hard to solve directly using integer programming. It will reduce the computational burden significantly if we cluster the data points first, then solve the reduced VRPTW to find multiple tours, finally we need to solve a travelling salesman problem with time window(TSPTW) for each tour to get the route for each data point. The idea of clustering has been successfully applied to the basic VRP problem. However very little work has yet been done in using clustering in the VRPTW variant. I will introduce a heuristic algorithm based on the normal clustering to try to solve this problem.