The Consistent Vehicle Routing Problem for a Food Distribution Firm

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Abstract

In this work, we present a heuristic for solving The Consistent Vehicle Routing Problem (ConVRP), which is motivated by a real-world application in a distribution center of a food company. The problem is characterized by a set of customers that vary from day to day, as well as their demand. Additionally, each customer requires that their orders be delivered within a certain time window. The main difficulty of the problem comes from the large size of instances and high demand variability.

We propose a new heuristic for solving the ConVRP for the food company. For evaluating the performance of the heuristic, we used the benchmark instances generated for the ConVRP from the literature. The results confirm the good performance of the implemented heuristic, outperforming several instances. Finally, for the food company, we obtain significant improvements in terms of generating a better consistent service.

Keywords: consistent vehicle routing, heuristics, logistics

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