



Research School for Operations
Management and Logistics

Data-driven Consistent Vehicle Routing Problem

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In order to increase loyalty from their customers by providing high levels of customer service, more and more small package shipping companies want to have a limited number of drivers to visit the same customers at roughly the same time on each day that the customers need service. These service requirements, together with the traditional constraints on vehicle capacity and route length, define a variant of the classical capacitated vehicle routing problem, called the consistent vehicle routing problem (ConVRP).

Recent developments in information and communication technologies (such as GPS, GIS, Internet of things) make more and more data are available on the transport processes, such as the real time location or real-time travel times of vehicles.

To get insightful information from these big data, new algorithms from the machine learning community have emerged. Deep learning and reinforcement learning are becoming compelling choice for the estimation of challenging mathematical models. These data-driven methods have the potential to be a new and better solution for solving new challenging transportation problems such as the ConVRP. The aim of this project is to investigate innovative machine learning approaches for solving consistent vehicle routing problems.