Variable Neighbourhood Search for Solving

Practical Dynamic Pickup and Delivery Problem

Our algorithm is a simple and efficient method, i.e., a variable neighbourhood search (VNS) method. In each re-optimization step, we first restore the solution calculated by our algorithm in the previous period, and then use the cheapest insert method to reconstruct the new solution in this period. As far as the VNS method is concerned, we designed several different local search methods, such as couple-exchange, couple-relocate, block-exchange, block-relocate, and employ them on the restored solution. After that, we disturb the current best solution by the 2-opt method. Finally, according to the urgency of each order in each path (or vehicle), we determine whether to delay the dispatch of the order, that is, whether to output the path to the simulator.