Two-echelon Vehicle Routing Problem Incorporating Robots for Last-mile Delivery

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\*\*\*General Introduction\*\*\*

This dataset contains the raw data of numerical experiments in the article, involving comparative experimental data between robots and delivery personnel, comparative experimental data between heuristic algorithms and Cplex, comparative experimental data with different time window widths, and comparative experimental data of two charging strategies.

The specific information included is as follows:

Customer (coordinates, time window, service time, demand)

temporary stop point (coordinates)

Warehouse (coordinates)

\*\*\*Purpose of the test campaign\*\*\*

The purpose of these experiments is to verify the accuracy of the model in the article, the effectiveness of the algorithm, and to demonstrate the benefits of using robots and partial charging strategies by comparing current scenarios

\*\*\*Test equipment\*\*\*

All tests were performed on a computer equipped with identical processors. Specifically, all experiments were performed on a laptop equipped with an i5-1035G1 CPU @ 1.00GHz and 16.0GB of memory.

\*\*\*Description of the data in this data set\*\*\*

All experimental data are adapted based on Solomon's data

The data included in this data set has been organized per specimen.

The files follow the nomenclature system:

Cplex comparison data: a customer point count of 5, 7, and 10, with 15 different sets of data for each scale.

Comparison results between DR and deliveryman: a customer point count of 5, 10, 20, 50, and 100.

Time Window - Numerical Experiment: a customer point count of 5, 10, 20, 50, and 100, with 6 different sets of data for each scale.

Two charging strategies: 4 different point sets