Soutenance de thèse de doctorat

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METAHEURISTICS FOR VEHICLE ROUTING PROBLEMS : NEW METHODS AND PERFORMANCE ANALYSIS

The goal of this thesis is to study cutting-edge problems and methodologies in the vehicle routing domain. In the first work, a state-of-the-art metaheuristic is adapted to address the time-dependent vehicle routing problem with time windows and transfer points (TDVRPTWTP) in a road network, where two different types of vehicles, large and small, are used to perform deliveries to customers located in different areas of a city. In particular, both types of vehicles must synchronize at specific locations to transfer loads aimed at downtown customers. The second work is an empirical study on the impact of data inaccuracies on the performance of two state-of-the-art metaheuristics, a classical heuristic, and an exact solver for the classical capacitated vehicle routing problem (CVRP). Finally, in the third work, a reinforcement learning component is integrated into a state-of-the-art metaheuristic for the CVRP. The learning component, based on ant colony system ideas, is aimed at detecting the most promising edges for generating good routes.

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