Construction Heuristics for the Capacitated Pick-Up and Delivery Problem

The Pick-Up and Delivery Problem (PDP) is a special case of the well-known Traveling Salesman Problem (TSP). Considered in literature are mostly the two cases where the capacity of the transporting vehicle is either non-binding or equal to one. However, literature on the case with arbitrary capacity is relatively scarce. In general, PDP literature focuses mainly on improvement heuristics. The way a first solution is constructed is mostly neglected.

Therefore, the aim of this thesis is to develop new ideas for construction heuristics that are specially tailored for the capacitated PDP. For this it might be convenient to extend or adapt approaches that were designed for other special cases of the TSP. The thesis should include a thorough description and analysis of the problem. An implementation and comparison of different methods is not mandatory but would add additional value to the work.

