

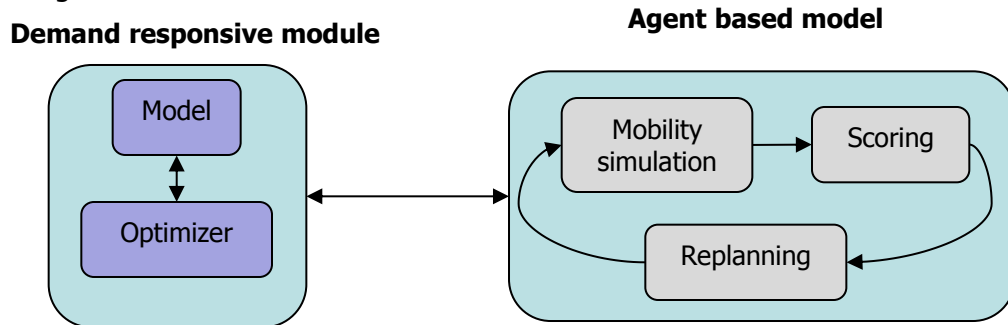
Assessment of demand responsive transport systems in Amsterdam using an agent based simulation framework



Problem description

Cities throughout the world face an increasing need for efficient mobility. The recent advancements of various ICT platforms have brought about the rise of demand responsive services (DRTs). Such services offer on-demand, real time services to users, thereby reducing the waiting times and providing accessibility to low demand density regions and improve the mobility of users. In order to design an efficient demand responsive system, it becomes essential to first understand the various operational aspects and their overall efficiency.

Analytical/mathematical models often fail to capture the real time dynamics of such a system. An agent based simulation model is chosen for this purpose. Users and vehicles are modelled as individual entities with autonomous decision making capabilities. An overview of the model is shown in the figure:



The masters student will work on the agent-based simulation platform(MATSim) and assess the impact of various operational aspects of demand responsive services (door-to-door/stop-to-stop, private/shared, paratransit, and car-sharing) on the mobility of users. The impact of these services will be analysed in terms of user perspective (generalised travel cost), operators perspective (operating cost, revenue), and system perspective. The model will be tested on the fully developed agent based simulation scenario of Amsterdam.

Information:

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