Abstract Submission

Topic: Heterogenous Fleet VRP with Time Windows

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ECommerce platforms drive the current era, and the COVID pandemic gave rise to the need for home delivery. The end consumers have multiple options to cater for their needs, and in that case, the eCommerce platforms have to provide on-time and quality delivery to stay ahead in the market and at the same time boost their profit margins.

Route Optimization is one of the most critical aspects of planning and transportation. It ensures that deliveries always arrive on time and carry out the same with the lowest possible cost and energy consumption. However, there are a lot of variables that eCommerce platforms need to consider in a real-time scenario.

During this unfortunate COVID pandemic, eCommerce platforms are dealing with a massive inflow of e-commerce orders from various customers scattered throughout a city, country or even across the globe. This gives rise to an enormous number of variables come into play that cannot be solved using conventional methods in a reasonable amount of time. With the recent developments in AI, machine learning and cloud data, the entire game of route optimization has begun to change. AI continuously retrieves data, learns from it, and searches for improved methods to ensure the most optimal routes for the drivers.

In the novel solution, we are trying to solve the multi-objective vehicle routing problem with optimization variables like minimizing the cost to deliver, the number of vehicles and delivery time. The solution approach will consist of both the metaheuristic and reinforcement learning approaches.