

Public Abstract

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Title: NEW MODEL OF FLYING SIDEKICK TRAVELING SALESMAN PROBLEM WITH A CHARGE-STATION

Cooperation between a truck and a drone for last-mile delivery has been viewed as a way to help make more efficient ways of delivery of packages because of the great advantage of drones delivery. This problem was described and formulated as FSTSP by Maurry and Chu. Because of the weakness concerning drones' batteries lifespan, this paper proposed a new delivery scenario in which a charge-station will be applied in the truck-drone delivery network to increase the performance of the last-mile delivery. This new delivery problem is formulated for the first time in this thesis as a multi-objective problem. The purpose of this is to address both transportation cost and total time consumption. Data analysis is conducted to explore the relation between factors and the overall objective. The analysis shows that a charge-station will significantly increase the performance of the last-mile delivery. Lastly, future work is discussed that will enhance the model even more and possibly lead to better ways to use drones for delivery.