TECH OFFER

Estimated Time of Completion (ETC) Prediction for Last-Mile Logistics

KEY INFORMATION

TECHNOLOGY CATEGORY:
Logistics - Delivery & Distribution
Logistics - Value-Added Services
Infocomm - Artificial Intelligence

TECHNOLOGY READINESS LEVEL (TRL): TRL4
COUNTRY: SINGAPORE
ID NUMBER: TO174399

OVERVIEW

The proliferation of e-commerce, ride-hailing and food-delivery services have fueled the need for more accurate and reliable estimation of delivery times. The current common estimation of delivery time is based on Estimated Time of Arrival (ETA) which relies on route distance that is calculated between the origin and the desired destination. It only considers the duration from pick up to drop off, and does not consider the additional time needed for preparing and offloading the goods.

This technology offer is a Machine Learning (ML) model that is able to calculate the stop duration (job completion duration), which together with the ETA, provides the Estimated Time of Completion (ETC). This ML model is for Singapore use only.

TECHNOLOGY FEATURES & SPECIFICATIONS

For the Machine Learning (ML) model to calculate the stop duration, users will need to key in the input parameters such as building name, block number, road name, postal code, day of week, day of month and time. The system will predict the stop duration (job completion duration) in minutes.

- ML model enables prediction of ETC based on historical data and a small set of input parameters
- Highly correlated with ETA which can be easily obtained from API services such as Google or Onemap
- Takes in consideration of temporal data including hours of the day and day of the week.
- Can be integrated with existing web/mobile based solutions.

POTENTIAL APPLICATIONS

Apart from being a productive tool for route planning systems, the software can also be used in various situations such as:

- Customer Services/Call Centres
- Fleet Management
- Loading Bay Assignment

This model can be used to improve the existing route planning systems as it provides additional job completion duration prediction on top of estimated ETA.

UNIQUE VALUE PROPOSITION

- Low cost - the model is easy to implement and incorporate into other applications.
- Simple to use - only a small set of input parameters are required.
- Able to predict the stop duration (job completion duration) with reasonable accuracy.

The technology owner is keen to out-license this technology to collaborators in the field of last mile-logistics, or collaborators who are providers of software for last-mile logistics. This ML model is for Singapore use only.