# 2016 年臺灣國際科學展覽會
# 優勝作品專輯

作品編號 **010037**

參展科別 **數學**

作品名稱 **An optimal-route algorithm for an intermodal Metro Manila trip planners using multiple parameters**

得獎獎項 **三等獎**


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## ABSTRACT

Parameters of traffic, road availability, and fare were integrated into a web-based application for determining the best public transport routes within Metro Manila in order to assist commuters in their travel planning, whether for business or for pleasure. A user-friendly interface was developed to obtain a user's place of origin and destination, as well as preferences in travel time, mode of transportation, and cost of journey. By accessing the traffic roadway network of the metropolis, a real-time situation of road availability was obtained, and used in a modified Dijkstra's shortest-path algorithm to produce a model of a real-time adaptive transport network of Metro Manila. From the model, an optimal route that considers the user's preferences can be determined. This project will be immensely useful in helping both businessmen and tourists in planning their routes that will save on time and money.

## 【評語】010037

This study used a modified Digkstra's shortest-path algorithm to model a real-time adaptive transport network of Metro Manila. This model can take various values of parameters provided by the customers and then compile optimal routes to travel for their reference. The most attractive feature of this study is in its practicality. As for the presentation, it will be proper if the algorithm can be provided and be discussed at some length. Empirical data had been collected in order to validate the model by checking the differences between the expected and the actual time required to travel. The sample sign, however, is rather small. Furthermore, the Mann Whituery u test is inappropriate as the two time variables are related.