# Developing a Personalized Travel Route Recommendation System Considering Multiple Contextual Conditions

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## ABSTRACT

Traditionally, self travelers must spend a lot of time to arrange travel route. Appropriate customized travel recommendations will enhance the customer travel experience and promote the development of tourism industry. In the last decade, recommendation systems have been demonstrated as powerful tools that help customer easier to handle huge amount of information and recommend suitable information to travelers. Thus, the purpose of the study is to develop a travel route recommendation-based and consider multiple contextual conditions. First, user's influence data in different contextual condition are collected by questionnaires. Then, context factor screening method is used to explore the high influence data. Next, Matrix factorization method is used to build the prediction model. Model will forecast POI (Point of interest) ratings when a new data is inputted. Third, considering start time, expected total travel time, travel time between various POIs, the system will calculate the predicted score for each POI and arrange the possible tourist route. To identify the appropriate parameters, a set of experimets are conducted to improve the quality of the final recommended paths. Based on the experimental results, it is clear that the recommended route can satisfy travelers's interest and travelers expected travel time.

Keyword: Recommendation systems、Travel Route、Recommendation、Collaborative filtering、Context