



SMU

SINGAPORE MANAGEMENT
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ANLY482: Analytics Practicum

*Car Park Overspill Study Project through time-series
data mining*

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1.0 Abstract

In Singapore, roads today already take up 12% of its total land area and with the limited land available. Singapore cannot afford to exhaust its land area by building more roads to accommodate vehicles and further expand the road network.

A strategic approach to parking would connect the separate decisions of parking provision at individual sites with the achievement of wider planning goals. Hence, there is need for us to examine existing understanding on parking issues, as the first step to re-consider the manner in which collective action might be taken on the basis of this knowledge. Usually, this information are in the form of spatio-temporal characteristics, hence, data mining techniques are applied in order to explore the insights of car park overspill pattern.

Data mining is the computational process of discovering patterns in large datasets, also known as “big data”. Whereas, for our project, the data collected are in time-series format. And time-series data is considered to be multidimensional data, as there is one observation per time unit and each time unit represents a dimension.

Parking utilization provides a time-series of typical parking demand for the development in that area that parking day. Thus, by comparing parking utilization comprehensively, the study will be able to clearly identify patterns and trends of those high and low usage car parks.

Hence, this paper seeks to explore using time-series data mining techniques to discover patterns and trends of similar car park sites within 29 shopping retail malls.