

## LSGI and CTM join hands to develop Macau into a smart city for tourists



The Hong Kong Polytechnic University (PolyU) and Companhia de Telecomunicações de Macau (CTM) today signed a Memorandum of Understanding (MoU) to conduct a spatial big data analytics study on the needs and preferences of tourists in Macau with an aim to improving Macau's tourism service and enhancing tourists' experience through innovative services.

The MoU was signed by Ms Eunice Cheang, Vice President, Strategic Programs of Companhia de Telecomunicações de Macau (CTM) and Professor John Shi, Head of PolyU's Department of Land Surveying and Geo-Informatics (LSGI) in a ceremony held at LSGI.

"PolyU is devoted to cutting-edge smart city technologies, including spatial big data analytics, smart navigation and positioning, and smart sensing. The LSGI's Laboratory for Smart City and Spatial Big Data Analytics (the Laboratory) aims to develop and transfer these technologies to industry. This collaboration, between an academic institute and industry from Hong Kong and Macau, will not only facilitate the development of smart city in Macau, especially in tourism, but also serves as a testbed for the development of smart cities in the Greater Bay Area (GBA)," Professor John Shi said.

The goal for the initial collaborative research program between the two entities is to develop a suite of analytical methods for visually exploring and quantitatively analysing tourist activities and behavioural patterns. This will include Wi-Fi facility optimisation, the development of data-mining algorithm and tools, and the mobile and Wi-Fi users behaviour-based study for the purpose of Macau's urban planning and tourism management enhancement.

Backed by the research expertise and facilities of the Laboratory, PolyU will develop machine learning models to analyse data collected through user surveys in predicting user satisfaction in telecommunication facility optimisation and service enhancement. In the meantime, spatio-temporal data mining of tourist activity patterns will be conducted to help identify different types of tourists (such as solo



or group travellers; on business or leisure trips) and understand their different needs and preferences. With that, new solutions will be developed to guide them explore Macau and enhance their travel experience.

Ms Eunice Cheang said that, at the current era of Internet of Things with the availability of massive data, data analysis is becoming more and more complicated and pressing. With the support of PolyU's advanced models, algorithm and platforms for big data analysis, CTM hopes to identify the trend of smart services that its clients need so as to further promote the smart city development of "Digital Macau".

Macau is a popular tourist destination in the region, it attracted more than 35.8 million visitors in 2018. The available big data in Macau enables PolyU researchers to develop and deliver data-driven smart city solutions for Macau as well as customised solutions for tourists in the city. CTM can better understand the point of interest of different types of tourists according to their origin, traveling frequency, mostly visited places, and stay periods so that they can plan relevant content for different tourist groups. The research will also be helpful in the prediction of tourism trends and its correlation with economy and public policies and the development of intelligent applications capable to providing personalised information for tourists.

Press releases:

[https://www.polyu.edu.hk/web/en/media/media\\_releases/index\\_id\\_6644.html](https://www.polyu.edu.hk/web/en/media/media_releases/index_id_6644.html)

Related news:

理大夥澳門電訊 大數據研智慧旅遊 (Sing Tao Daily, 2 May 2019)

<http://std.stheadline.com/daily/article/detail/1997933-%E6%95%99%E8%82%B2-%E7%90%86%E5%A4%A7%E5%A4%A5%E6%BE%B3%E9%96%80%E9%9B%BB%E8%A8%8A+%E5%A4%A7%E6%95%B8%E6%93%9A%E7%A0%94%E6%99%BA%E6%85%A7%E6%97%85%E9%81%8A>

理大夥澳門電訊大數據研智慧旅遊 (Headline Daily, 3 May 2019)

<http://hd.stheadline.com/news/daily/hk/760696/>