

## HK's airport leverages real-time trolley supply monitoring system to improve passengers' experience



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Sept. 20, 2017



Hong Kong skyline at night. Credit: Storyblocks

The Hong Kong International Airport (HKIA) has rolled out a real-time trolley supply monitoring system to improve its operations.

Equipped with an AI-based video content analytics that enables it to be 92 percent accurate, the system enables frontline staff to make proper and timely allocation of trolleys for passengers.

"By using machine learning techniques such as support vector machines and neural networks, we are able to use video data to build trolley supply monitoring system that helps the airport to improve its operations."

The real-time trolley supply monitoring system was developed in collaboration with the Department of Systems Engineering and Engineering Management at the Chinese University of Hong Kong (CUHK), in collaboration with the Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM R&D Centre) and Airport Authority Hong Kong (AA).

### Improving passengers' experience

The system is designed to make resources allocation more flexible and efficient, thereby improving passengers' experience.

Different signals represent different levels of availability: red alert for empty racks, yellow alert for quantity dropping down to 50 or below, and green alert for normal supply of more than 50.

The data network features edge processing capability to eliminate the need of high bandwidth video transfer while maintaining the image quality and data quantity.

A total of 18 video cameras have been placed in the Baggage Reclaim Hall for monitoring trolley availability. The system can automatically blur visual contents other than the trolley racks. All images are encrypted and requires specific client applications to decrypt for viewing.

"Through the application of intelligent data and automation technologies, we hope HKIA can become more efficient, convenient, and enhance the airport experience for our passengers," said Chris AuYoung, general manager, Smart Airport of the AA. "This is a good example illustrating our successful collaboration with the local research and development institutions and universities."

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