



Press Release

To: Assignment Editor/Editor of Education, Local News and Technology Sections

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HSUHK's award-winning AI System enhances inventory management and product promotion for e-commerce industry

A research team from The Hang Seng University of Hong Kong (HSUHK)'s School of Decision Sciences has successfully developed an all-in-one e-commerce sales and inventory management Artificial Intelligence (AI) application system, EBizbot.

Aiming to improve warehouse management efficiency and enhance online product promotion for businesses, EBizbot utilises latest technologies, including the Internet of Things (IoT), AI, Robotic Process Automation (RPA), and Mixed Reality (MR), to provide real-time price comparison and analysis, product description generation, and assistance with order replenishment.

The project, supported by the Government's Innovation and Technology Fund of over HK\$1.7 million, has won the "Silver Award" at the Geneva International Exhibition of Inventions 2023.

Project coordinator, Dr George Ho To-sum, Associate Professor of the Department of Supply Chain and Information Management of HSUHK, said "Nowadays, e-commerce based small and medium enterprises (SMEs) encounter challenges such as tight deadlines for repetitive tasks, complex processes and a shortage of manpower. Additionally, limited warehouse spaces make it difficult for SMEs to establish effective inventory management systems. New warehouse staff often need time to familiarise themselves with the work environment and product storage locations. To address these challenges, HSUHK has developed EBizbot, an innovative solution that digitalises and improves operational processes, streamlines workflow, and thus enhance overall efficiency."

EBizbot can automatically generate customised and enhanced descriptions for merchants' products based on various attributes, including product appearance, texture, functions etc. The system can also select and generate suitable wordings from 35 target customer segments to effectively appeal to specific groups of customers. During a six-month pilot run, the research team found that the system saved 90% of time compared to traditional methods of creating product descriptions, helping merchants to quickly list their products and improve operational efficiency.

EBizbot applies RPA technology to automate workflow processes and integrate data from multiple e-commerce platforms. It filters prices based on keywords and specifications, enabling decision-makers to access data on the overall market situation by running multiple price comparisons simultaneously. Additionally, it analyses the data collected from price comparisons to establish optimal pricing strategies for developing smart promotion. During the pilot run, the system demonstrated significant time savings with over 60% for price changes and 80% for product data changes compared to traditional methods.



Furthermore, using RPA technology, EBizbot enables real-time tracking and replenishment of warehouse inventory. The system provides suggestions for optimising inventory across various sales platforms, to prevent overstocking or shortages. During the pilot run, it saved over 60% of time compared to traditional methods of checking inventory across different platforms.

EBizbot is equipped with a MR head-mounted device, which allows warehouse workers to receive pick-up requests from operators. The device displays detailed information such as product titles and quantities, provides visual guidance to warehouse workers for locating storage positions, as well as performs real-time updates on inventory quantities. This significantly reduces time spent on logistics and human errors. Additionally, it effectively reduces training time for new employees by more than half.

The system also analyses social media hashtags and videos, especially for longer content such as live-streaming sessions featuring product endorsements. It reorganises and analyses keywords from a large volume of data sources and suggests trending keywords for social media posts.

Dr George Ho hopes to expand EBizbot to more e-commerce platforms in the future, so that it can consistently monitor popular topics and trends on social media to assist merchants in product marketing. EBizbot has now entered the commercialisation stage. The research team is actively engaging with various types of merchants to promote the system and further expand its reach to more e-commerce companies.

Photos:



Photo 1: A research team from HSUHK's School of Decision Sciences has developed an award-winning AI System, EBizbot. Photo shows Project coordinator, Dr George Ho, Associate Professor of the Department of Supply Chain and Information Management (second from right), Dr Valerie Tang, Lecturer of the Department of Supply Chain and Information Management (second from left), and other members of research team.



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Photo 2: Dr Ho demonstrates how to use EBizbot's Mixed Reality head-mounted device.

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About The Hang Seng University of Hong Kong

The Hang Seng University of Hong Kong (HSUHK) is a non-profit private liberal-arts-oriented university with five Schools (Business, Communication, Decision Sciences, Humanities and Social Science, and Translation and Foreign Languages) and over 6,000 full-time students. Adopting the unique “Liberal + Professional” education model, HSUHK aims to nurture young talent with critical thinking, innovative minds, caring attitudes, moral values, and social responsibility.

Aspiring to be a leading private university in the region, HSUHK features a primary focus on undergraduate education, top-quality faculty members, award-winning green campus facilities, innovative degree programmes, unique residential college system combining living and learning, interactive small class teaching, very close student-teacher relationship, RGC-funded impactful research, and excellent student development/support services. HSUHK is listed the 7th (overall) in the ASEAN+ region, the 1st in the Greater China region, and the 1st in Employability as per the 2023 AppliedHE ASEAN+ private university assessment by the Singapore-based AppliedHE. It is also listed among the top 200 worldwide on “Quality Education” and “Decent Work and Economic Growth” in the Times Higher Education University Impact Rankings 2021.