



## 電腦科學系教授設計的人工智能系統奪國際獎

### Computer Science professor receives international award in artificial intelligence application

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香港城市大學(城大)電腦科學系副教授陳漢偉博士為處理入境事務部門設計的人工智能系統，獲全球頂尖人工智能機構——人工智能促進協會(Association for the Advancement of Artificial Intelligence)頒發人工智能創意應用大獎，突顯城大應用研究的卓越成就。陳博士最近更為即將舉行的奧運馬術預賽「香港回歸十周年盃」設計人工智能系統，協助編排約900名工作人員的工作。

今次獲獎的人工智能應用技術是一種自動評估及支援決策系統，主要協助該入境事務部門處理大量證件申請。系統能夠迅速找尋與各項申請有關的參考條款和案例，協助處理入境事務的工作人員更有效及準確地處理每個個案。這個系統亦會自動更新，將新案例納入知識庫中，供所有人員查閱及參考，協助他們以最合適的方法處理每項申請。有關部門自從2007年初使用該系統後，運作效率變得更高。

陳博士說：「為處理入境事務工作設計人工智能應用技術最具挑戰的，就是批核證件申請涉及大量複雜的法律條文、規例和不成文慣常處理手法。我們需要找到一個方法，讓系統有效地進行邏輯分析，處理數據。經過不斷研究，最後我們以多重人工智能範例(multiple AI paradigm)建立了一個獨特的人工智能應用技術，讓他們能夠更迅速地審核各項申請。」

另外，第29屆奧林匹克運動會馬術比賽(香港)有限公司也採用了陳博士研發的人工智能應用技術，用於編排

「香港回歸十周年盃」所有工作人員的工作，包括行政、票務、宣傳、保安、醫療及技術支援等。該系統亦可加強工作人員與主辦單位的溝通，讓他們即時了解賽事的最新發展及工作編排上的改動。

陳博士表示，透過人工智能系統編排工作，能確保每項工作皆由最合適的工作人員負責。系統會根據每名工作人員的專長及工作時間平均分配工作，讓比賽的每一個環節都有足夠及合適的工作人員當值。系統不但有助主辦單位善用人力資源，亦可幫助大會在各方面達到最佳服務水平。

陳博士說：「今次為奧運馬術預賽設計人工智能系統，只有不足兩個月的時間準備。系統既要應付一千多個用戶，對保安及系統表現的要求亦相當高。幸好我們對建立類似系統已經擁有相當豐富的經驗，所以能夠順利完成。」

陳博士研究人工智能超過20年，其設計的人工智能應用技術多年來共獲得11項本地及國際獎項，包括四次獲得人工智能促進協會頒發的獎項。該機構為國際性非牟利組織，旨在向全球各地推廣人工智能應用技術，每年均會頒發獎項予世界各地的機構，表揚他們在運用人工智能方面的出色表現。

陳博士研發的人工智能應用技術重點在於協助機構優化營運，以達到最佳運作效率和生產力，為香港市民帶來更高質素的服務。陳博士研發的人工智能應用技術成效顯著，已獲本港多家大型機構採用，其中包括香港國際貨櫃碼頭、香港機場管理局、醫院管理局及地鐵公司等。

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Dr Andy Chun Hon-wai, Associate Professor in the Department of Computer Science at City University of Hong Kong (CityU), received an international award in July for the artificial intelligence (AI) system he designed for streamlining the immigration-related processes.

The Innovative Applications of AI (IAAI) Award was given by the Association for the Advancement of Artificial Intelligence (AAAI), the world's leading organization for AI academics and practitioners. The IAAI Award is the only well-known award for AI applied research in the world. This award is global recognition for CityU's excellence in applied research.

The award-winning AI technology is an automatic assessment and decision support system that helps streamline processes for issuing documents. The system encodes immigration-related laws and regulations and provides case references for immigration officers to assess applications more effectively. Using AI, the system learns the latest "best practices" and makes them available to all case officers. Since installation in early 2007, the system has contributed to improving the processes.

"The AI design for the immigration-related processes was challenging. The laws and regulations, as well as the modeling of the decision-making process, were all highly complex," Dr Chun said.

"To solve this multi-faceted problem, we used multiple AI paradigms, such as business rules, clustering, case-based reasoning and data mining to provide rapid decision support," he added.

In addition, Dr Chun recently designed an AI Workforce Management System for the Equestrian Event (Hong Kong) of the Games of the XXIX Olympiad Company Limited, which is part of the Hong Kong Equestrian Committee for the 2008 Olympics. The AI system is now being used for the "HK SAR 10th Anniversary Cup", which doubles as a "dress rehearsal" for next year's equestrian event in the Olympics.

The AI system ensures sufficient manpower to support the equestrian events in terms of administration, ticketing,

#### Other media coverage :

##### Newspapers

10-8-2007 *Ming Pao Daily News* 《明報》, *Sing Tao Daily* 《星島日報》, *Ta Kung Pao* 《大公報》, *Wen Wei Po* 《文匯報》, *Metro Daily HK* 《都市日報》, *Oriental Daily News* 《東方日報》, *Sing Pao Daily News* 《成報》, *Hong Kong Economic Times* 《經濟日報》, *Hong Kong Commercial Daily* 《香港商報》, *South China Morning Post* 《南華早報》, *Hong Kong Daily News* 《新報》, *am730*, *The Standard* 《英文虎報》

##### Electronic media

9-8-2007 *TVB Jade* 《無綫翡翠台》, *Metro Radio* 《新城電台》



promotion, security, medical services, technical support, and so forth. It also facilitates communication by providing messages, up-to-date information and work schedules. The system matches expertise and availability to ensure a sufficient number of appropriately-trained personnel for each task. This allows the Equestrian Company to optimize manpower resources while maximizing the quality of service.

"One of the challenges was that we had less than two months to develop the system," Dr Chun said. "We had to build a robust, secure and intelligent system that can be used by over 1,000 users. Creating such system in a short time was not easy. Fortunately, we had extensive experience in developing AI scheduling systems and were able to provide a quick turnaround."

Dr Chun has been performing applied research in AI for over 20 years. His applied research work has garnered numerous local and international awards, including receiving the prestigious Innovative Applications of AI Award on four separate occasions.

The AAAI is an international, non-profit, scientific society devoted to promoting AI worldwide. Each year AAAI gives out awards to different organizations for their outstanding performance in applying AI technologies.

CityU's AI research helps enterprises maximize productivity, resulting in better quality of service for Hong Kong citizens. Many organizations in Hong Kong have benefited from CityU's AI technologies, such as the Hongkong International Terminals, Hospital Authority, Airport Authority, MTR Corporation, among others.