



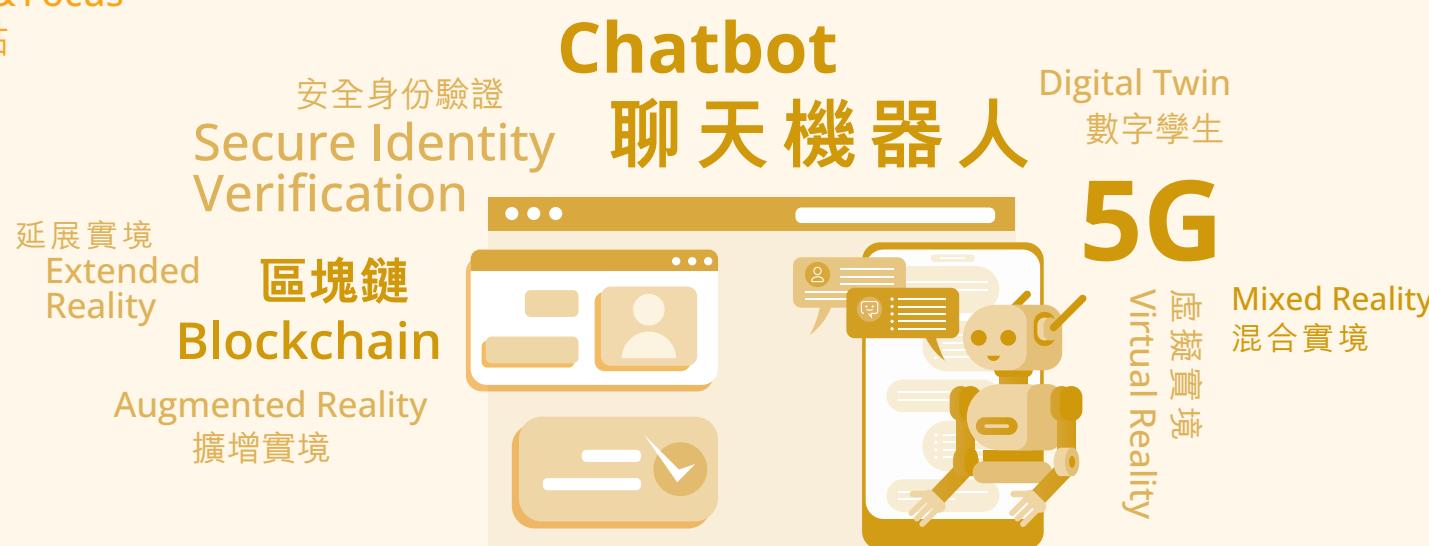
## METAVERSE 元宇宙

The metaverse, where physical and virtual spaces converge through immersive technologies, is revolutionising how industries collaborate, communicate, and innovate. ASTRI is at the forefront of this transformation, developing cutting-edge solutions in augmented reality, virtual reality, blockchain, artificial intelligence (AI), and spatial computing. These technologies empower businesses to create cost-effective, scalable, and efficient solutions that address the challenges of modern living while unlocking new opportunities.

元宇宙正透過沉浸式技術融合實體與虛擬空間，革新各行各業的合作、溝通及創新方式。應科院走在轉型前沿，積極開發擴增實境、虛擬實境、區塊鏈、人工智能及空間運算等頂尖技術方案。這些技術有助企業打造具成本效益、可擴展且高效的解決方案，應對現代生活的挑戰及開拓嶄新機遇。

## Research Areas & Focus

### 研究領域與重點



## Technologies Breakthrough

### 技術突破



**XR Platform for Automotive Technician Training**  
ASTRI collaborated with a Chinese Mainland automaker to develop an XR platform that digitalises training for automotive technicians. This innovative solution provides trainees with immersive, computer-generated scenarios to practise skills in a wide range of technical situations, enhancing learning effectiveness and efficiency.

**汽車技術人員XR訓練平台**  
應科院與中國內地汽車製造商合作開發一套汽車技術人員XR培訓平台，實現技術人員培訓數碼化。此創新方案讓學員能在多元技術情境下，透過沉浸式電腦模擬場境練習技能，從而提升學習成效及培訓效率。

**AI-Powered Virtual Avatars for Digital Advertising**  
In January 2025, ASTRI partnered with AsiaPac Net Media Limited to optimise the use of AI-driven virtual avatars in digital advertising. The agreement includes post-project licensing for algorithms that generate half-body human-like avatars and contract services such as speech generation, voice conversion, and video language translation with lip synchronisation. This technology transforms single image or video into multiple outputs, significantly reducing production costs and enhancing digital content creation.

#### 人工智能虛擬人像數碼廣告方案

2025年1月，應科院與亞太網絡資訊有限公司展開合作，改善人工智能虛擬人像於數碼廣告上的應用。該協議涵蓋項目完成後的演算法技術授權安排，用於生成半身虛擬人像，並包括如語音生成、語音轉換及具唇形同步的視頻語言翻譯等合約服務。此技術可將單一圖片或影片轉化為多種輸出形式，大幅降低製作成本，並提升數碼內容製作效率。



### Tokenised Asset Systems

Through blockchain technology, ASTRI is advancing Real-World Asset (RWA) tokenisation, integrating physical assets like real estate into the metaverse. Tokenisation improves liquidity, enables fractional ownership, and secures transactions with smart contracts, opening up new possibilities for virtual asset management.

#### 資產代幣化管理系統

應科院透過區塊鏈技術推動實體資產（RWA）代幣化，將房地產等實體資產整合至元宇宙平台。資產代幣化有助提升流動性，實現部分持有權，並通過智能合約保障交易安全，為虛擬資產管理開創更多新可能。

### Call Monitoring for Compliance

In November 2024, ASTRI entered into a hybrid agreement with Continuous Technologies International Limited to commercialise advanced chatbot technology. This collaboration includes the development of an audio masking tool, as well as multiple speech recognition and natural language processing (NLP) models designed for call monitoring systems. Beyond post-project licensing, the partnership focuses on delivering innovative compliance tools and facilitating knowledge transfer to improve customer service and operational efficiency.

#### 合規通話監察

2024年11月，應科院與匯卓科技有限公司簽訂混合型協議，合作推動先進聊天機械人技術商業化。此合作項目包括開發用於通話監控系統的音頻遮罩工具、多項語音識別，以及自然語言處理（NLP）模型。除了項目授權外，雙方合作還着重於提供創新的合規工具及知識轉移，從而提升客戶服務和運營效率。

### Semi-auto AI for Spatial Computing

ASTRI's Semi-auto AI for Spatial Computing combines real and synthetic data to manage spaces more efficiently across caregiving, construction, and transportation sectors. This solution is already deployed in Hong Kong's mass transit railways (MTR) and traffic light systems, optimising transport flow and improving urban mobility.

#### 半自動人工智能空間運算技術

應科院的半自動人工智能空間運算技術結合真實與合成數據，能更高效管理護理、建築工程及交通等領域的空間。此解決方案已應用於香港的鐵路和交通燈系統，有效改善交通流量，提升城市出行效率。



Through these innovations, ASTRI continues to contribute to the development of Metaverse in Hong Kong.

透過這些創新技術，應科院繼續為香港的元宇宙發展作出貢獻。

## Partnership and Commercialisation

### 合作夥伴及市場化項目

#### Generative AI Platform for the Hong Kong Airport Authority 香港機場管理局生成式人工智能平台

ASTRI collaborated with the Hong Kong Airport Authority (HKAA) to develop a generative AI platform tailored to its operational needs. The project involved fine-tuning open-source large language models (LLMs) with the HKAA's proprietary data, leveraging Chinese Mainland-based GPUs to ensure security and performance. The platform supports a range of applications, including a staff Wikipedia tool and a self-service knowledge management system, enhancing knowledge sharing and operational efficiency.

#### Talent Identification and Succession Planning for the Hong Kong Police Force 香港警務處人才遴選及傳承規劃

In partnership with the Hong Kong Police Force, ASTRI developed an AI-driven solution for talent identification and succession planning. The system evaluates candidates based on their experiences, personality traits, and performance appraisals. It also provides succession recommendations, including training gap analyses and appraisal-based evaluations, ensuring a streamlined and data-driven approach for more effective workforce development and organisational planning.

應科院與香港機場管理局（機管局）合作研發一個切合其營運需要的生成式人工智能平台，利用機管局專有數據優化大語言模型，並兼用中國內地GPU，保障平台的安全性及提升運算成效。平台支援多項應用，包括專為員工而設的維基百科工具及自助知識管理系統，有助促進知識分享及提升營運效率。

應科院與香港警務處合作開發一套以人工智能為基礎的人才遴選及傳承規劃方案，根據候選人的經驗、性格特質及績效評核進行綜合評估；並提供崗位繼任建議，包括培訓差距分析及以評核為基礎的綜合評估，確保以精簡和數據驅動的方式，更有效地進行人力資源發展及機構規劃。

#### Project commenced in 2024/25\* 2024/25年度開展的研發項目\*

Spatial Computing Intelligence for Enterprise Extended Reality (XR) Applications

適用於企業延展實境 (XR) 應用的空間運算智能

GT4Tech: Gesture Tracking in 4-Dimensional Space

GT4Tech: 四維空間手勢追蹤

Nanoimprinted Active Polarisation-based Metasurface Module

基於納米壓印技術的主動可調偏振的超構表面模組

Hyperrealistic Contextual Enrichment: Cohesion through Topographical Virtual Integration

透過地形虛擬整合實現超現實情境增強

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