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NTU, Aumovio working on affordable AI systems for vehicles

These models could help make roads safer by alerting drivers in dangerous scenarios

Sarah Koh

Nanyang Technological University (NTU) and automotive firm Aumovio are collaborating to develop artificial intelligence models that car-makers can affordably adopt, which could help make driving in Singapore safer.

With the help of cameras that capture road conditions, these AI models can send alerts to drivers when they are in dangerous scenarios, such as when other cars or humans are in their blind spots, or when they are veering off their intended lane.

This is among 13 projects that the university and Aumovio have embarked on as part of a three-year collaboration that involves over 130 researchers, engineers, undergraduates and post-graduate students.

The Aumovio-NTU Corporate Lab seeks to commercialise tools from research in fields such as AI, materials science, cybersecurity and vehicular communications, said both organisations in a joint statement.

The collaboration, which began in July 2025 and was officially launched on April 6, marks the second phase of a partnership which began in 2019 as the Continental-

NTU Corporate Lab.

The joint lab is supported by the National Research Foundation under the Research, Innovation and Enterprise 2025 plan, although both organisations declined to reveal funding details.

To run autonomous systems or driver assistance features, most vehicles need dedicated AI chips or require an internet connection, said Aumovio's senior AI engineer Darius Tan.

AI chips can cost thousands, which drives up the cost that car-makers pay to adopt AI in their vehicular systems.

To combat the cost issue, the lab is working to compress AI models that can be run fully offline, or on existing vehicle electronics that may not be purpose-built for AI.

This would allow a wider variety of carmakers – including non-luxury brands – to adopt AI systems for reasons such as enhancing driver safety, said Mr Tan.

“As the AI model is running without an internet connection, data captured within the car will also be kept on the device and private.”

The Continental-NTU Corporate Lab was renamed after Aumovio was spun off in September 2025 from German manufacturer Continental's automotive group.



(From left) Aumovio-NTU Corporate Lab co-director David Woon; Aumovio Singapore president and CEO Lo Kien Foh; Digital Development and Information Minister Josephine Teo; NTU vice-president (industry) Lam Khin Yong; and Aumovio-NTU Corporate Lab co-director Guan Yong Liang at the launch of phase two of the partnership on April 6. ST PHOTO: NG SOR LUAN

Aumovio supplies hardware and software products such as sensors, brake systems and advanced driver assistance systems to carmakers such as BMW, Mercedes-Benz, Audi and Suzuki.

With \$50 million in funding in its first phase, the lab focused its initial research on smart robotics and navigation technologies to enable last-mile deliveries, AI and soft-

ware engineering, and leveraging innovative materials and communication technologies to develop tools such as advanced sensors and touch-responsive interfaces.

Minister for Digital Development and Information Josephine Teo said the collaboration has worked well so far as NTU and Aumovio each bring expertise that the other lacks. She was speaking during the

launch event held on April 6 at NTU's Research Techno Plaza, where the lab is located.

“Developing something that works reliably under real automotive conditions required research depth that Aumovio could not build overnight – NTU had exactly that expertise,” said Mrs Teo.

“Translating research into solutions that work under real industry

pressures requires real-world industrial deployment experience that a university does not have – but Aumovio does.”

She noted that past projects include the AI Pathfinder tool, which automates the testing of central dashboard interfaces in vehicles. It helped to save 1,200 man-hours on testing for a new dashboard, and is currently undergoing pilot trials with a regional carmaker.

“We hope to see more of such collaborations in our national AI missions and in our Champions of AI programme,” said Mrs Teo.

Singapore's AI missions detail how the Government plans to accelerate the development, testing and deployment of AI solutions in the key sectors of advanced manufacturing, finance, healthcare and connectivity.

Under the Champions of AI programme, support will be provided for firms with the ambition to use AI to comprehensively transform their businesses.

The joint lab is also working to train an AI model that will send alerts about potential risks on the road, based on an in-car camera's detection of the driver's eye gaze.

This helps to beef up the safety of autonomous and driver-assistance systems that mostly rely on data that captures what happens outside a car, said Associate Professor Lyu Chen from NTU's School of Mechanical and Aerospace Engineering.

“Some vehicles already have camera systems that monitor drivers, but their functionalities are limited – they can track only whether the driver is paying attention,” he said.

“With this system, we hope to understand the driver's cognitive status and current activities, and then fuse this information with data from the external environment.”

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