Schaeffler-NTU Lab Boosts AI-Driven Humanoid Robotics

Nanyang Technological University, Singapore (NTU Singapore) and the leading global Motion Technology company Schaeffler have officially launched the next phase of their corporate laboratory partnership to drive research and innovation in AI-enabled humanoid robotics.

Gracing the launch of the new Schaeffler-NTU Corporate Lab: Intelligent Mechatronics Hub today as Guest of Honour was Dr Tan See Leng, Minister for Manpower and Minister-in-charge of Energy and Science & Technology, Ministry of Trade and Industry.

Located on NTU Singapore's campus, the new 900-square-metre facility will contribute to Singapore's strategic goal of strengthening advanced manufacturing and robotics. It marks another milestone in the collaboration between NTU and Schaeffler, which started in 2017.

The corporate laboratory is supported by the National Research Foundation, Singapore (NRF) under the Research, Innovation and Enterprise (RIE) 2025 plan, and developed in partnership with the Singapore Economic Development Board (EDB).

It will focus on advancing collaborative robotics, autonomous mobile robot platforms and assistive robotic systems, targeting applications in manufacturing, logistics and healthcare.

The lab will also collaborate with researchers from other institutions of higher learning, further reinforcing Singapore's position as a regional hub for intelligent automation and humanoid robotics innovation.

It is part of Schaeffler's global Schaeffler Hub for Advanced Research (SHARE) network that collaborates with leading universities worldwide through its company-on-campus concept.

Uwe Wagner, Chief Technology Officer at Schaeffler AG, said: "The next phase of collaboration at the Schaeffler Hub for Advanced Research at NTU marks a significant milestone in our long-standing partnership and reinforces our commitment to pioneering innovation in robotics and artificial intelligence. With a focus on advancing technologies for humanoid robotics, this partnership represents a key step forward in our holistic agenda to drive progress in this future field. Drawing on expertise across our eight product families, Schaeffler is best equipped to shape the future of humanoid robotics. By working closely with leading researchers at NTU, we strive to accelerate development and deliver value that resonates far beyond the regional level."

Prof Lam Khin Yong, NTU Vice President (Industry), added: "This expanded collaboration with Schaeffler reinforces NTU's position as a leading research university with strong multi-party partnerships between academia, industry, and public agencies. The corporate lab provides a platform for our researchers, doctoral candidates, and students to work on challenges in robotics alongside industry experts. We have also collaborated closely with Schaeffler engineers to develop robots that can co-work with humans, with advanced sensors improving sensitivity and safety, which has direct industrial impact. I'm confident that our innovations can boost the manufacturing sector and shape the future of autonomous and assistive robotics in Singapore and beyond."

Cindy Koh, Executive Vice President, EDB said: "Schaeffler's continued investments in Singapore have contributed important capabilities to our advanced manufacturing ecosystem, and created highly skilled research, engineering and corporate jobs. The expanded corporate lab builds on the success of Schaeffler's longstanding partnership with Singapore's research community and universities, helping to connect academic research with real-world industry applications. This aligns with Singapore's strategic interest to increase adoption of robotics and embodied AI in advanced manufacturing and unlock new opportunities across industries."

Since the collaboration began in 2017, the NTU-Schaeffler partnership has produced numerous innovations.

These include a real-time visualisation of touch and force technology that enhances the precision and safety of robots in industrial settings through real-time sensing, and a universal soft gripper that can handle a wide range of objects with diverse geometries, stiffness levels, and surface properties to boost productivity and efficiency in manufacturing and supply chain applications.

Beyond research, the partnership supports talent development by training PhD, Master's, and undergraduate students, providing them with hands-on experience through working alongside Schaeffler engineers and researchers on real-world projects. Many alumni of the programme have since assumed leadership positions in academia and industry, contributing to Singapore's deep technology ecosystem and advanced manufacturing sectors.

SHARE at NTU will further enhance Schaeffler's innovation footprint in Asia and support NTU's continued drive for interdisciplinary research and industry collaboration to address some of the world's most critical challenges.