

Teradyne Robotics to Bring the Power of AI to Robotics with NVIDIA

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The collaboration with NVIDIA adds the power of accelerated computing to robotics. The new AI capabilities will increase the application potential of Universal Robots while also powering enhanced functionality in the new MiR1200 Pallet Jack launching this week.

NORTH READING, MA / ACCESSWIRE / March 19, 2024 / [Teradyne Robotics](#), which includes collaborative robot (cobot) company [Universal Robots](#) (UR) and autonomous mobile robot (AMR) company [MiR](#), has announced a collaboration with NVIDIA to bring new AI capabilities to automation applications.

This week UR will be at the [NVIDIA GTC](#) global AI conference in San Jose, California, demonstrating an AI-powered autonomous inspection solution. Through this collaboration and for this showcase, UR has integrated NVIDIA accelerated computing into its cobot for faster planning, making path planning 50-80x faster than today's solutions. The combination of the [NVIDIA Jetson AGX Orin](#), a complete system-on-module (SOM) designed for edge AI applications, the cuMotion path planner from the NVIDIA Isaac Manipulator platform, UR's new PolyScope X software and its UR5e cobot platform is expected to increase application potential and efficiency for automation customers.

Teradyne Robotics has also announced the launch of a new AI-powered solution for pallet handling, the [MiR1200 Pallet Jack](#). The newest product from MiR harnesses advanced AI pallet detection powered by the NVIDIA Jetson AGX Orin module. The MiR1200 Pallet Jack uses 3D vision to identify, pick up and deliver pallets with unprecedented precision, even in dynamic and complex environments. With the addition of this Pallet Jack to the portfolio, MiR has become a one-stop shop for autonomous material handling at factories and warehouses.

New capabilities unleashed through AI and accelerated computing

The MiR1200 Pallet Jack and UR's cuMotion demo are the two most recent examples of "physical AI" solutions, with others already available through Teradyne Robotics' ecosystem partners, OEMs and end users.

Group President of Teradyne Robotics, Ujjwal Kumar, says, "This is the first of a series of planned AI offerings by Teradyne Robotics. By adding high-performance compute hardware to our control systems, as well as investing in targeted upgrades to our software stacks, we are investing to establish UR and MiR as the preferred robotics platforms for developing and deploying AI applications. We are working to shape the future of robotics by combining NVIDIA's state-of-the-art AI platform with Teradyne Robotics' real-world domain expertise in industrial automation. We're creating the platform for new solutions to previously unsolvable problems."

"NVIDIA's Isaac platform is enabling increased autonomy in robotics with rapid advancements in simulation, generative AI, foundation models and optimized edge compute," said Deepu Talla, Vice President of Robotics and Edge Computing, NVIDIA. "This collaboration with Teradyne Robotics will bring the power of AI and accelerated computing to rapidly growing cobot and AMR markets."

Enhanced path planning delivers concrete benefits for customers

Autonomous inspection and the autonomous Pallet Jack are two complex use cases with big scalability potential.

Using the cuMotion path planner from the NVIDIA Isaac Manipulator platform in combination with the UR cobot and PolyScope X makes possible a range of applications that were previously not feasible to automate fully, as well as improves existing programming concepts. Key benefits include ease of programming and lower computation time for planning, optimizing and executing trajectories. For customers, this technology will help simplify the setup of common industrial applications, increasing automation potential in high-mix, low-volume scenarios. CuMotion not only allows automatic calculation of path planning for collision-free trajectories but also enables path optimization for other criteria such as speed, minimum wear or energy efficiency.

MiR1200 Pallet Jack powered by NVIDIA Jetson platform navigates dynamic, complex environments

The MiR1200 Pallet Jack was designed to deal with complex warehouse requirements and dynamic environments that make traditional automation challenging. Trained on more than 1.2 million real and synthetic images, the MiR1200 Pallet Jack combines data from four RGBD cameras to enable fast and precise pallet handling. Concurrently, the NVIDIA Jetson platform fuses feedback from the RGBD cameras, as well as 3D LiDAR, to detect obstacles in 3D space for fully autonomous navigation.

The NVIDIA Jetson platform provides the advanced computing needed to handle this much data in real time. As a result, the MiR1200 Pallet Jack can dynamically modify its route to avoid obstacles, such as loose objects on the floor, raised forks in the drive path or overhead obstacles. Its ability to navigate effortlessly in tight spaces with minimal changes to the existing infrastructure makes it well-suited to optimizing logistics efficiency and ensuring timely delivery of pallets.

[A collection of images and videos for the NVIDIA/Teradyne Robotics collaboration.](#)

About Teradyne

Teradyne (NASDAQ:TER) test technology helps bring high-quality innovations such as smart devices, life-saving medical equipment and data storage systems to market, faster. Its advanced test solutions for semiconductors, electronic systems, wireless devices and more ensure that products perform as they were designed. Its robotics offerings include collaborative and mobile robots that help manufacturers of all sizes increase productivity, improve safety, and lower costs. In 2023, Teradyne had revenue of \$2.7 billion and today employs over 6,500 people worldwide. For more information, visit [teradyne.com](https://www.teradyne.com). Teradyne ® is a registered trademark of Teradyne, Inc., in the U.S. and other countries.

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