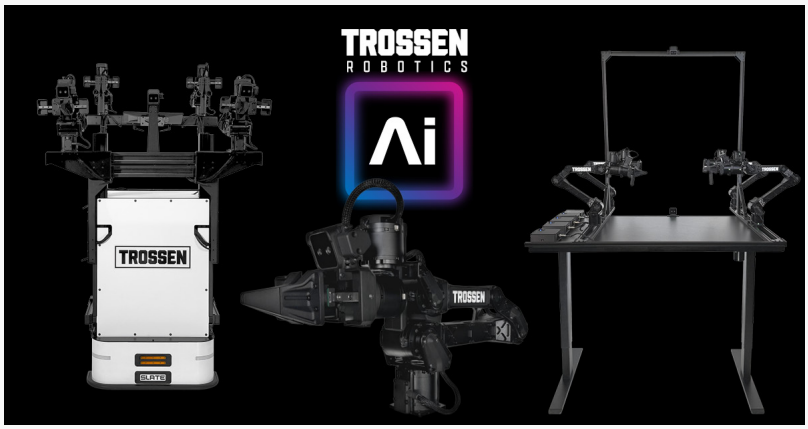
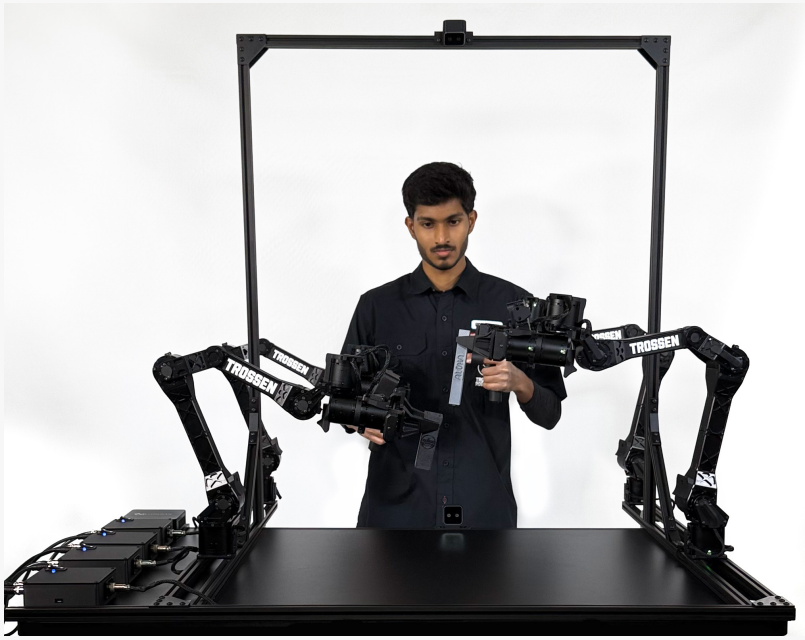
Trossen Robotics Redefines Value in Robotics Research with Next-Generation AI Hardware

Trossen AI hardware is a purpose-built all-in-one solution for robotic machine learning research and development—Data Collection, Model Training, & Evaluation.



Trossen Mobile AI, WidowX AI and Stationary AI



User operating a Trossen Stationary AI

DOWNERS GROVE, IL, UNITED STATES, February 25, 2025 /EINPresswire.com/ -- Trossen Robotics Redefines Value in Robotics Research with Next-Generation AI Hardware

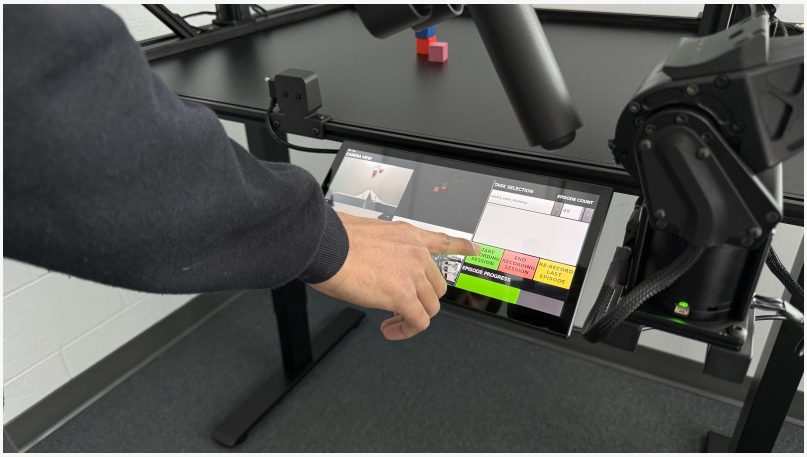
Trossen Robotics, a pioneer in robotics innovation for over two decades, has once again redefined affordability and performance with the launch of its next-generation AI hardware lineup. Designed for advanced artificial intelligence, machine learning, and robotics research, the new hardware delivers industrial-level features and capabilities at an unprecedented price point.

Building on the legacy of the renowned Aloha Kits, the WidowX AI hardware is set to raise the bar for research hardware, delivering professional-grade components and comprehensive software support for a lower cost than the previous generation. The new kits will be available starting late Q1 2025, with pricing and configurations detailed at www.trossenrobotics.com/ai.

Revolutionizing Research: Features Without the Premium Price Tag

At the heart of the new lineup is the WidowX AI robotic manipulator, which delivers more

features, precision, and versatility than ever before. With components typically reserved for high-cost industrial systems, Trossen Robotics is making it possible for students, researchers, and engineers to access cutting-edge technology without breaking the bank.



User collecting data using the touchscreen GUI interface of Trossen Stationary AI

“Our new AI kits offer a leap in functionality at an incredible value,” said Matt Trossen, CEO of Trossen Robotics. “We’ve packed them with industrial-grade controllers, seamless data pipelines, and robust hardware for the same price as our legacy WidowX products. These are not just incremental upgrades—they’re a generational leap forward, pushing the boundaries of what affordable research hardware can achieve.”

The Legacy of Aloha, Reimagined

The AI lineup builds on the foundation laid by the Aloha Kits, introducing replacements that take research capabilities to the next level:

- Mobile AI replaces Aloha Mobile.
- Stationary AI replaces Aloha Stationary.
- Solo AI replaces Aloha Solo.
- WidowX AI Leader and Follower Arms replace legacy leader-follower configurations.

These kits maintain the core principles of the Aloha Project—low-cost, high-quality, accessible hardware—while offering groundbreaking advancements in performance, precision, and ease of use.

WidowX AI: Built for the Future of Robotics Research
The WidowX AI manipulator is engineered for longevity and versatility, featuring billet CNC aluminum construction, all-metal idlers, reinforced braided cables, and integrated cable management. Its advanced QDD servos with hybrid-drive technology deliver high torque in a lightweight package.

Paired with an industrial-grade 24V/25A power supply, rack-and-pinion gearset for precise linear control, and a portable touchscreen GUI, the WidowX AI is ready for any research environment—mobile, stationary, or desktop.

Advanced Software and Controllers: Industrial Precision Meets Research Needs

At the core of the WidowX AI kits are the ultra-high-performance iNerve® Control Board and the Interbotix® Driver. These innovations enable:

- Lightning-Fast Asynchronous Data Protocol: Over 500Hz operating speeds for real-time responsiveness.
- Model-Based Control: Advanced compensation for gravity, Coriolis forces, and friction.
- Custom Load Mass Profiles: Tailored configurations for unique end-effectors and payloads.
- C++ Driver with Python and ROS Bindings: Seamless integration with tools like Hugging Face LeRobot and NVIDIA ISAAC.

Comprehensive Data Pipelines for Seamless Research
The new AI kits are more than just hardware; they are complete AI research platforms:

- Data Collection: Simplified GUI with native support for Hugging Face Lerobot, and common data formats like Parquet, Arrow, and HDF5

- Model Training: Train locally with GPU-accelerated tools or offload to the cloud using Google Colab.

- Model Evaluation: Fine-tune hyperparameters and test with pre-trained models or user-generated datasets.

Safety and Reliability for the Next Generation of Research
The AI kits ensure reliable and secure operation and are equipped with state-of-the-art safety features like joint constraint enforcement, idle mode with gravity compensation, and torque estimation. Upcoming enhancements will include advanced collision detection and pre-trajectory collision avoidance.

A Legacy of Excellence
Trossen Robotics remains committed to delivering unmatched value to researchers worldwide. With the new AI kits, Trossen continues its mission of empowering students, researchers, and engineers with tools that combine cutting-edge technology, affordability, and unparalleled support.
To learn more or pre-order, visit www.trossenrobotics.com/ai.

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