



AI-Powered Dual-Arm Manipulation Platform

The AI-powered dual-arm manipulation platform establishes a new paradigm in mobile manipulation with its flexible and intelligent design. Designed for safe human-robot collaboration, the platform seamlessly integrates perception, decision-making, and motion control systems, enabling efficient execution of complex dual-arm collaborative tasks in dynamic, human-centric environments. Leveraging AI-driven vision and control technologies, the platform accurately understands variations between scenes, flexibly adapts to environmental uncertainties, and reliably manipulates a wide range of objects regardless of material, shape and fragility.



Innovations and Technologies

- Full-Body Collaborative Manipulation Capabilities: The highly flexible 20-degree-of-freedom (DOF) configuration, comprised of two 7-DOF robotic arms, a 4-DOF waist lift, and a 2-DOF head mechanism, enables coordinated full-body movement. It not only enables complex and precise tasks but also improves efficiency and flexibility
- The AI-based visual perception system equipped with semantic understanding and object recognition capabilities provides powerful support for real-time operation and adaptive control
- Safe Adaptive Collaboration: A hybrid end-effector integrated with joint torque sensing technology and versatile gripping/adsorption capabilities can adapt to objects of varying shapes and materials, enabling safe and efficient human-machine collaboration

Target Applications

- Warehouse Automation: Enables efficient picking, sorting, and transportation of goods, effectively reducing labor costs and improving warehouse operational efficiency
- Retail Operations: Supports stocking, order fulfillment, and multi-task collaboration in supermarkets and unmanned retail environments, facilitating the smart retail transformation
- Services: Provides services in a variety of scenarios, such as caring for the elderly and assisting medical staff in providing health services