

mujin OS

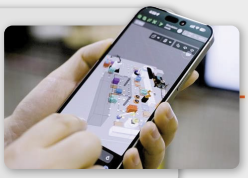
All Your Automation On One Platform

The World's Most Advanced
Intelligent Automation Platform

MujinOS makes deploying automation easier than ever, combining a no-code approach and AI-driven intelligence to eliminate direct programming and enable robots to think, adapt, and operate autonomously across all tasks

Digital Twin

Data-driven, real-time model of a system, directs every motion, detection, and decision in any working environment



Perception

AI-driven vision enables real-time adaptability for picking, placement, and quality control in dynamic environments



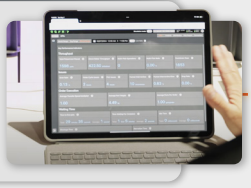
Motion Planning

Autonomous motion planning ensures smooth, collision-free paths in real time, optimizing cycle times and uptime



Orchestration

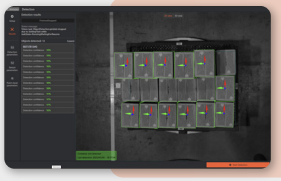
Manages and runs system components smoothly, synchronizes tasks, and adapts in real time, ensuring seamless operation





MujinOS Applications

Like building blocks, users can build any solution by combining standard applications, unlocking limitless potential



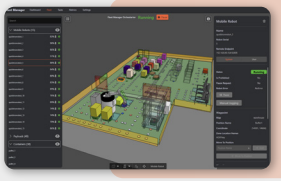
Vision Manager

Easily integrate advanced vision to a system, with automatic SKU registration and real-time item detection



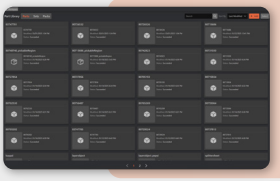
Execution Manager

Manage high-level order execution by communicating with any WMS and orchestrate tasks across a system



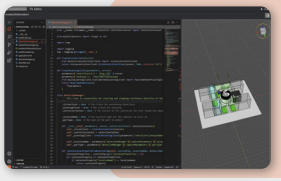
Fleet Manager

Coordinate fleets of mobile robots with intelligent task management, enabling interoperability and maximizing efficiency



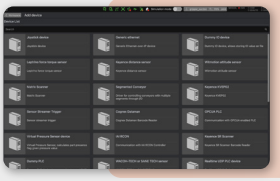
Parts Manager

Build and manage a library of parts, cases, sheets, packs, and containers – organizing all elements that a robot manipulates



Robot Motion

Generate real-time, collision-free paths that optimize robot trajectories, creating organic movements that improve cycle time



Controls Interfacing

Seamlessly connect and control safety and I/O devices, MHE, and PLCs, feeding real-time data into the Digital Twin to enable

Unleash Intelligence with the **MujinOS Digital Twin**

The real-time Digital Twin enables design, testing, and optimization of system processes before production begins. By using the same real-time logic as the physical system, every motion, interaction, and goal will work exactly as planned. With built-in playback, visualization, and analytics, the Digital Twin provides next generation traceability with complete digitization of any warehouse





Start Production in Minutes

Build complex scenes using simple shapes with an intuitive UI, easily add robots and devices to any setup, and define goals and parameters with no coding



Real-Time Control

The Digital Twin provides real-time control for robots, mobile robots, and peripheral devices while interfacing with any PLC – allowing for on-the-fly planning within dynamic environments considering all hardware requirements with zero re-configuration required

System Orchestration

The orchestration layer makes robots work like experienced operators – thinking ahead, adjusting to reality, and making sure every aspect of a system works together to get the job done – conducting a symphony of productivity in any warehouse workflow

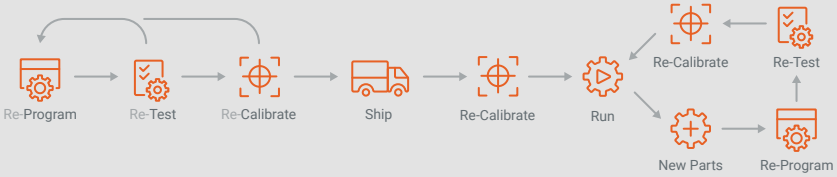
Intelligent Automation

Leverages MujinOS to simplify complex, real-world automation while increasing overall flexibility and scalability



Traditional Automation

Requires highly skilled, tedious programming and multiple, disparate systems to deploy static-logic, inflexible automation



Built with MujinOS:
Mixed SKU Depalletizing

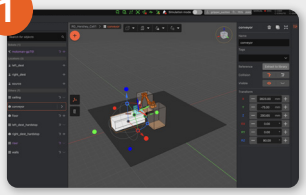
Learn more about **Depalletizing**

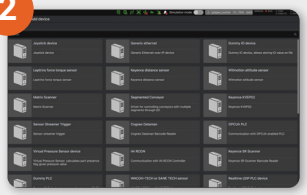


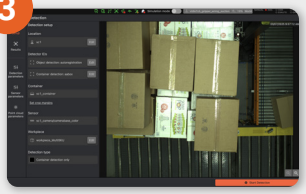
Mixed case depalletizing is no simple task. MujinOS handles unknown and unique loads, adapts to business rules, and optimizes every pick to maximize throughput — all with quick deployment and minimal integration effort

600+	99.9%+	<2	1 Day
cph	reliability	year ROI	deployment

Unlock simplified depalletizing with the MujinOS platform. Enable quick and easy setup with a model-based approach, plug-and-play vision integration, automatic sensor calibration, and instant optimization for any robot model

1

Model & Edit

2

Configure Devices

3

Configure Packs

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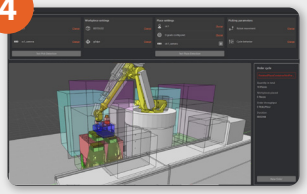

Setup Application

Varied Types of Packages

Handle complex packaging shapes, including trays of bottles and shrink wrapped items, with no damage

On-the-Fly Registration

Register new workpieces on-the-fly, with no teach-in required, reducing downtime in any operation

Maximize Throughput

Opportunistic multi-picking handles multiple cases at once to keep operations running at peak

Dynamic Placement

Adaptive goal setting enables dynamic case placement for induct into downstream operations

+ and more



Depalletizing at a Top Retailer

Discover how a top retailer revolutionized its receiving operations by implementing Mujin Intelligent Depalletizing. The system autonomously inducts all palletized freight into the DC, increasing throughput and reducing errors

See more of Mujin **Depalletizing** at a top retailer

Built with MujinOS:
Single SKU Palletizing

Learn more about
Palletizing



Build single-SKU pallets with no-code programming.

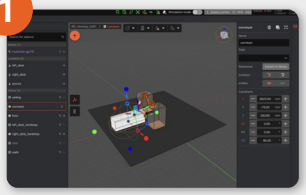
Instantly create ready-to-run pallet recipes - no programming needed. Maximize throughput and reliability from day one with real-time motion planning, simple setup, and effortless scalability

600+	99.9%+	<2	1 Day
cph	reliability	year ROI	deployment

Unlock simplified palletizing with the MujinOS platform.

Enable quick and easy setup with a model-based approach, intuitive pack-building tools, immediate pattern validation, and instant optimization for any robot model

1



Model & Edit

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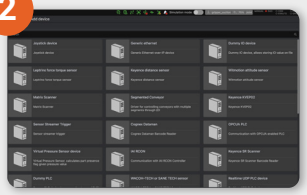

Configure Devices

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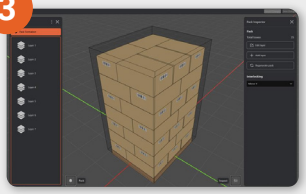
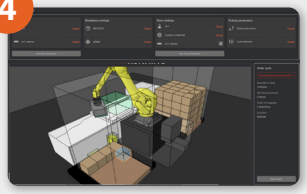


Define SKUs & Packs

4



Setup Application

Any Type of Package

Handle complex packaging shapes, including boxes, bags, totes, or trays, with confidence and ease

Generate Packs

Automatically generate new pallet patterns and instantly validate them for production

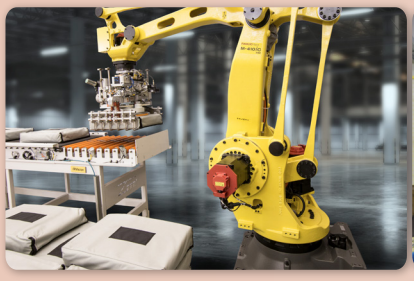
Pack Any Container

Stack cases onto pallets, racks, cages, and carts without re-calculating tool paths

Labels Out

Build pallets with consideration for downstream processes, ensuring label visibility

+ and more





Palletizing at a Top Food Manufacturer

Discover how Mujin empowered a major food manufacturer to rapidly deploy single-SKU palletizing and build a library of recipes to use on various palletizing systems across their sites, increasing their throughput while minimizing bottlenecks

See more of Mujin
Single SKU Palletizing at a top food manufacturer

Built with MujinOS:
Mixed SKU Palletizing

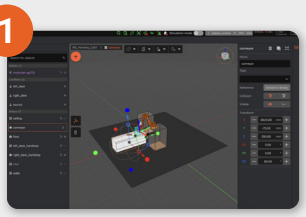
Learn more about
Palletizing



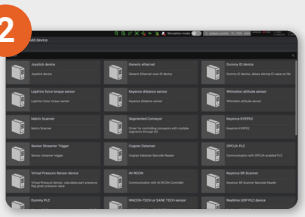
Build mixed-SKU pallets with precision and speed.

Without manual sorting or fixed stacking rules, MujinOS dynamically organizes and places cases on-the-fly, ensuring stable, efficient palletizing while maximizing throughput and reducing complexity

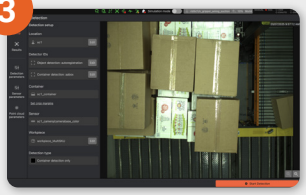
600+	99.9%+	<2	1 Day
cph	reliability	year ROI	deployment



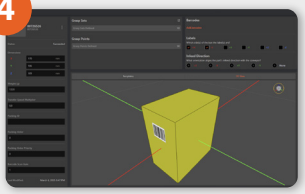
1 Model & Edit



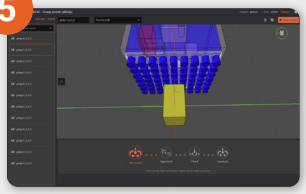
2 Configure Devices



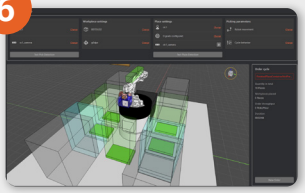
3 Detection Setup



4 Add Parts



5 Configure Grasps



6 Setup Application

Any Type of Package

Stack complex packaging shapes, including trays of bottles and shrink-wrapped items, without damage

Generate Packs

Automatically create stable, shelf-ready pallets optimized for efficient store replenishment

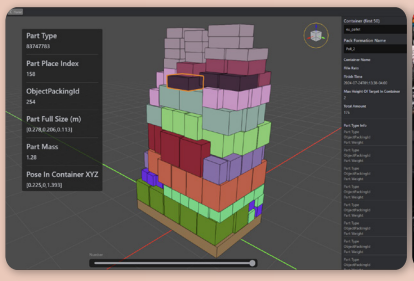
Pack Any Container

Stack cases onto pallets, racks, cages, and carts seamlessly without recalculating tool paths

Priority Rules

Build pallets using rules like grouping similar SKUs, crushability constraints, and label visibility

+ and more





Mixed SKU Palletizing at PALTAC

Discover how PALTAC transformed fulfillment operations with Mujin Intelligent Palletizing. The system automatically generates stable, damage-free, shelf-ready pallets and carts from diverse packaging types—dramatically boosting throughput and efficiency

See more of Mujin
Mixed SKU Palletizing at PALTAC

Built with MujinOS:
Bin Picking

Learn more about
Bin Picking



Say goodbye to unreliable bin picking and endless re-teaching. Mujin's Intelligent Bin Picking instantly handles complex parts and workflows, providing industry-leading speed, no-code setup, and unmatched reliability from day one

900+	99.9%+	<2	1 Day
pph	reliability	year ROI	deployment

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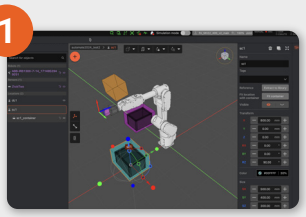
Model & Edit

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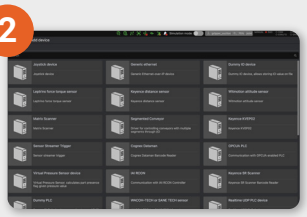
Configure Devices

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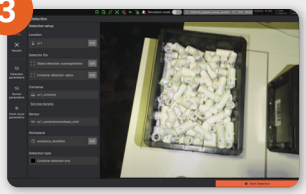
Detection Setup

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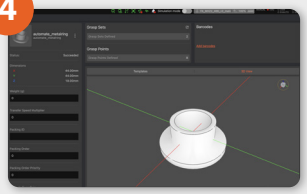
Add Parts

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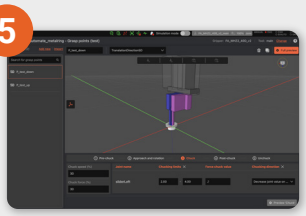
Configure Grasps

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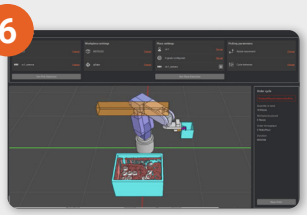

Setup Application

CAD-Based Picking

Upload files for any CAD-based model and add it to your item library to start picking instantly

User-Defined Workflows

Increase flexibility with easily defined, complex motions and interactions for any workflow

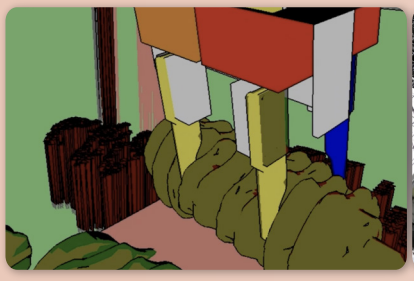
Autonomous Assembly

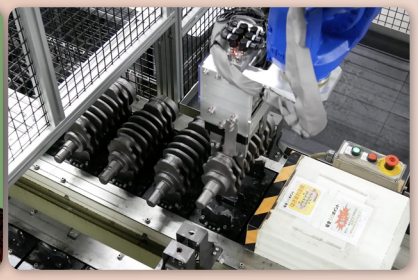
Seamlessly transition from picking workflows to assembly, improving manufacturing agility

Precise Placement

Automatically determine part placement into fixtures or jigs, ensuring accuracy and efficiency

+ and more





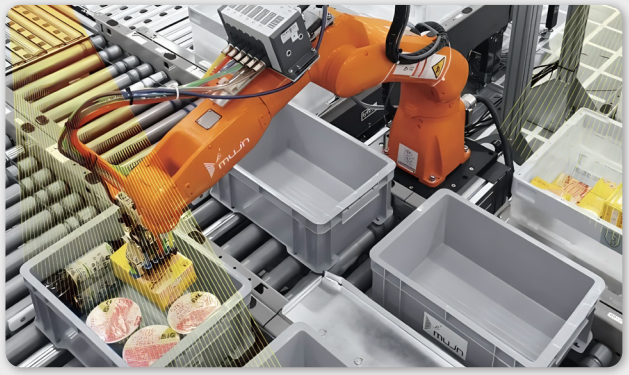
Bin Picking at Subaru's Ōizumi Plant

Discover how Subaru's Ōizumi Plant optimized crankshaft loading with Mujin Intelligent Bin Picking. The system uses 3D vision and motion planning to ensure precise bin picking, prevent tangles, and detect anomalies. MujinOS ensures fast issue resolution

See more of Mujn
Bin Picking at Subaru Ōizumi

Built with MujinOS:
Piece Picking

Learn more about
Piece Picking



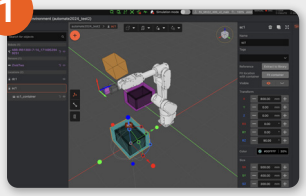
Unlock faster, more flexible piece picking. Mujin's technology eliminates manual bottlenecks by fully automating order fulfillment, keeping pace with rising demand while ensuring accuracy, efficiency, and seamless integration into existing workflows

900+	99.9%+	<2	1 Day
pph	reliability	year ROI	deployment

Simplify piece picking with MujinOS,

featuring a no-code, intuitive interface for quick setup in any environment. Automatically register new workpieces, manage grasp points, and streamline fulfillment operations with intelligent automation

1



Model & Edit

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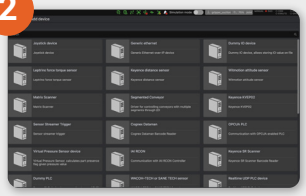

Configure Devices

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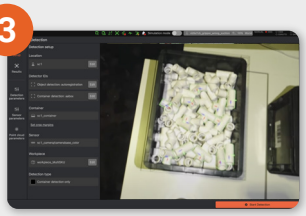

Detection Setup

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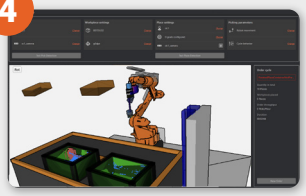


Setup Application

Any Type of Item

Grasp items of any size or shape and place them precisely, in any type of container

6-Face In-Air Scan

Capture barcodes from any angle while in motion, ensuring registration and faster processing

Speed Control

Adapt robot speed in real-time based on item weight and orientation, maximizing efficiency

User-Defined Packing

Increase flexibility with easily defined, complex packing rules, ensuring orders arrive as expected

+ and more



Piece Picking at LOGISTEED, Ltd.

LOGISTEED automated pharmaceutical sorting with Mujin's intelligent 3D vision and motion planning. The system efficiently arranges products, prevents damage, scans barcodes from any angle, and integrates seamlessly with material handling equipment

See more of Mujin
Piece Picking at LOGISTEED, Ltd.

The World's Fastest Unloader
TruckBot powered by MujinOS

Learn more about **TruckBot**

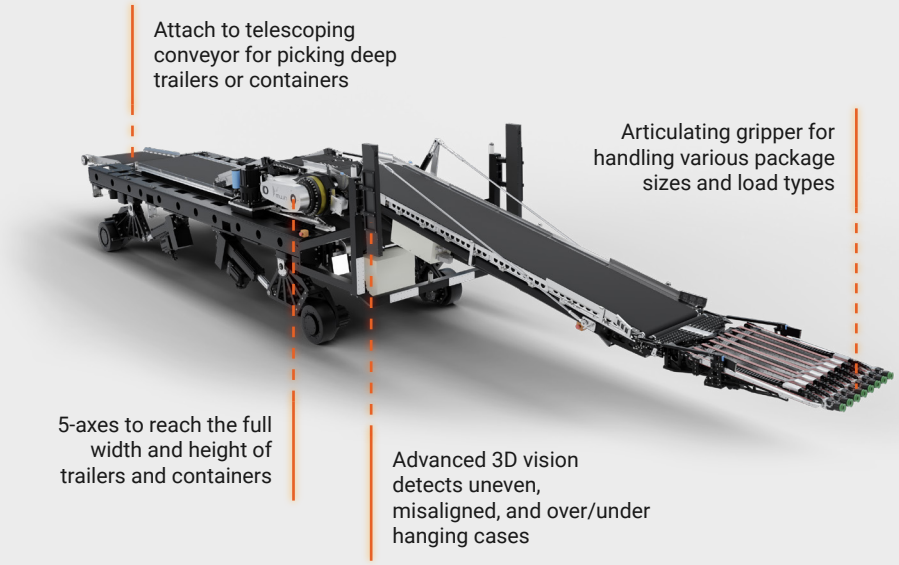


AUTOMATE YOUR INBOUND

This revolutionary warehouse innovation was designed to attach to standard telescoping conveyors found at many existing loading docks. It reaches up to 52 feet into the truck trailer or shipping container and can handle boxes weighing up to 50 lbs, including containers with packing complexities and mixed SKU loads

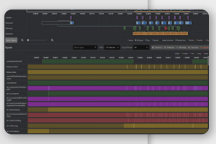
TruckBot is a game-changer for warehouses looking to streamline their operations and reduce costs. TruckBot eliminates the dock door bottleneck, streamlining unloading with safer, more efficient automation

Container height	10'
Container depth	52'
Case dimensions	8in – 32in
Payload	50lbs
Pick rate	Up to 1,000 cph



Executed Perfectly with MujinOS

Mujin's execution layer autonomously synchronizes TruckBot's unloading processes with downstream operations like conveyance and palletizing. MujinOS ensures continuous flow — maximizing efficiency



Watch TruckBot perform **Intelligent Unloading**

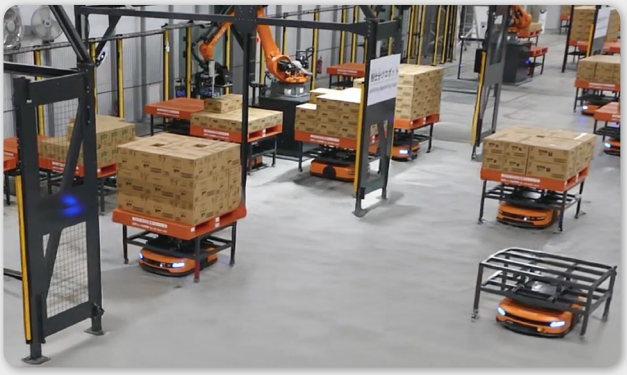
All Managed Through A Single Digital Twin

Using a no-code interface, users can define unloading rules with flexibility and simulate real-world conditions. Integrated advanced vision detects uneven, misaligned, overhanging, and varied packages, allowing TruckBot to adjust its approach in real time with actionable feedback — ensuring smooth, autonomous unloading



Maximize Fleet Efficiency with **Fleet Manager on MujinOS**

Learn more about **Fleet Manager**



Coordinate and optimize mobile robot fleets with real-time intelligence. Mujin's Fleet Manager continuously plans, prioritizes, and executes tasks, enabling mobile robots to adapt dynamically, minimize delays, and maximize operational efficiency

A fleet at your fingertips

cases and parts | pallets | forklift | ASRS shuttle



Plug-and-Play

Easily add new robots to a database and start autonomous operations within minutes

Interoperable Fleets

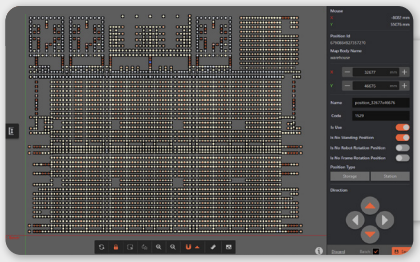
Manage all mobile robots through a single interface, with intelligent path planning around each other

Every Brand, Any Model

Integrate Fleet Manager to existing mobile robots with confidence, increasing flexibility

Interleaved Planning

Continuously plan while executing fleet operations to dynamically adjust to new information on-the-fly

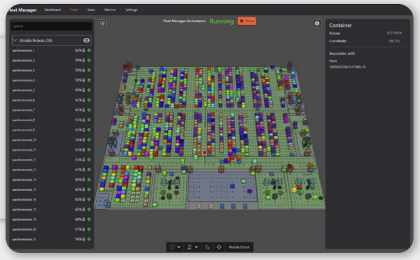


Simple Map Building and Editing

MujinOS' Fleet Manager enables users to easily build large maps with complex obstacles and interactions. Ensure flexibility with a seamless map editor that instantly updates AGV and AMR pathing, allowing for on-the-fly adaptation and scalability

Executed Perfectly with MujinOS

Mujin's execution layer receives goals from business systems and orchestrates tasks across mobile robots, enabling application-specific priorities, seamless system interactions, and coordination with site operations teams for optimal performance



Achieve Intelligent Fulfillment with **Robotic Case Picking**

Learn more about **Robotic Case Picking**



AUTOMATE YOUR OUTBOUND

Streamline order fulfillment with robotic case picking (RCP). Build orders with precision and speed, minimize errors, and reduce downtime with a simplified platform for complex automation. With MujinOS, ensure flexibility and scalability while effortlessly keep up with growing demand



Leverage Fleet Manager

Enhance order fulfillment operations with MujinOS' advanced mobile robot pathing software: **Fleet Manager**



Integrate RCP with an ASRS

Maximize throughput with a small footprint when combining robotic case picking with a vertical storage solution

Third-Party Logistics

Improve multi-client flexibility and scalability, enhancing service levels with ease

Retail and Ecommerce

Increase order processing efficiency and utilize adaptive inventory management

Food and Beverage

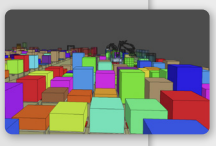
Maintain compliance with safety standards and improve handling of perishables

Consumer Goods

Improve operational efficiency and accelerate order fulfillment in a fast-paced market

RCP simplifies complex order fulfillment

Automate complex order fulfillment by seamlessly coordinating robot arms and mobile robots. Build store-ready pallets with precision and efficiency, leveraging adaptive workflows that scale with operations



See how a 3PL transformed fulfillement with **RCP**

All Managed Through A Single Digital Twin

Using a no-code interface, users can easily build work environments and define fulfillment rules with flexibility while simulating real-world conditions, all while autonomously handling complex pack formations and interactions. MujinOS orchestrates robots and devices to communicate with a WMS and execute fulfillment tasks, staying agile in a fast-paced environment





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