Multiway Robotics

Multiway Horizons

Empowering Smart Manufacturing with AI-Enabled Flexible Robots

www.mw-r.com

Multiway Horizons

We leverage machine vision and AI technologies to develop adaptable solutions that drive smart manufacturing and intelligent logistics. Through vehicle-road collaboration, vehicle-factory collaboration, and comprehensive monitoring of business dynamics, we enable visualized management and ensure a secure operational environment facilitated by an edge computing data processing platform. This guarantees the stable operation of the factory, cost reduction, and improved efficiency.

Three Key Functions

Function Module

Flexible Empowerment

Cage Stacking

- Cage deformation detection
- Stacking safety inspection
- Cargo offset detection
- Disassembly and stacking at different heights

Automated Loading and Unloading for Vehicles

- Compatible with multiple vehicle types (wing body, flatbed, van)
- Location planning for different cargoes (optimized space utilization)

Automated Loading and Unloading for Vehicles

- High-precision cargo picking and placing
- Cargo unloading space detection

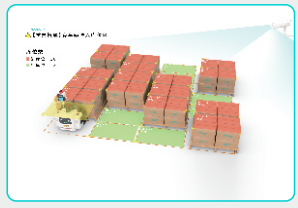
Pallet Posture Recognition

- Support pallet deviation of up to ± 45° and ± 80 cm
- Compatible with various types of pallets, cages, etc.
- Non-stop pallet pose identification by visual perception
- Support fast online training for non-standard vehicles
- Support side placed, front picking;

Operation and Management

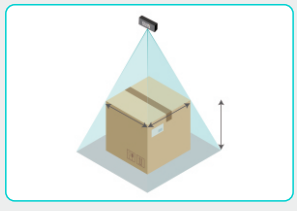
Visual Inventory

- Inspection of images for full-pallet cargo
- Calculation of full-pallet cargo quantity



Storage Location Detection

- Available location detection
- Offset detection



Cargo Information Recognition

- Barcode recognition
- Chinese character recognition
- Overload detection
- Diameter measurement
- Color recognition
- Quantity calculation
- Contour detection
- dth × Height measurement

Safety Monitoring

hicle-Road Collaboration

- Intruder detection
- Foreign object detection on tracks
- Path interference detection

Environmental Safety Detection

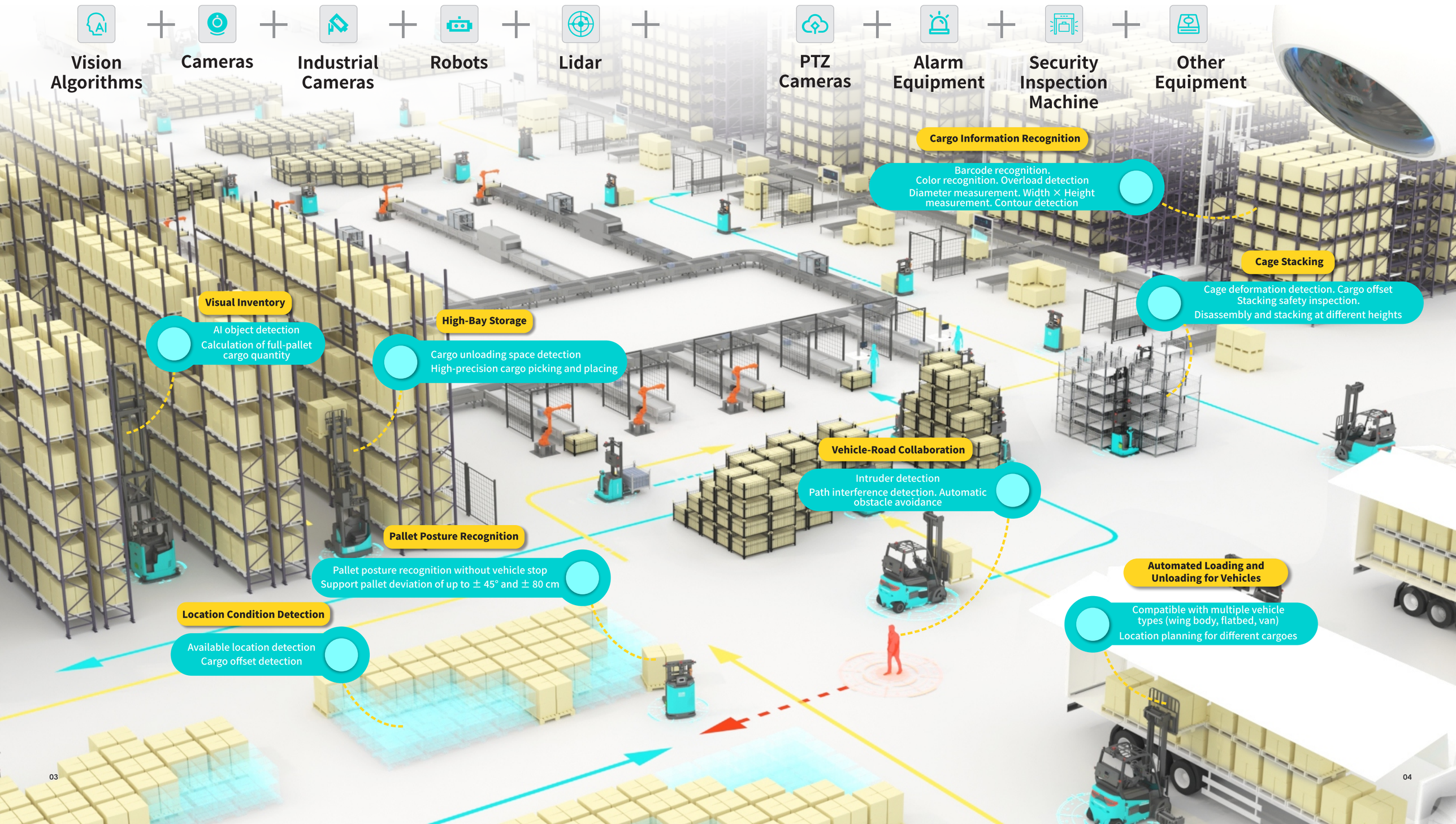
- Open flame and smoke detection
- Calculation of full-pallet cargo quantity

Worksite Safety Inspection

- Face recognition
- Off-duty detection
- Fall detection
- Uniform detection
- Helmet detection
- Glove detection
- Abnormal behavior detection
- Cargo overturning detection

Flexible Vision Solution—Horizons System

Vision Algorithms + Cameras + Industrial Cameras + Robots + Lidar + PTZ Cameras + Alarm Equipment + Security Inspection Machine + Other Equipment



Visual Inventory

AI object detection
Calculation of full-pallet cargo quantity

High-Bay Storage

Cargo unloading space detection
High-precision cargo picking and placing

Pallet Posture Recognition

Pallet posture recognition without vehicle stop
Support pallet deviation of up to ± 45° and ± 80 cm

Location Condition Detection

Available location detection
Cargo offset detection

Cargo Information Recognition

Barcode recognition.
Color recognition. Overload detection
Diameter measurement. Width × Height measurement. Contour detection

Cage Stacking

Cage deformation detection. Cargo offset
Stacking safety inspection.
Disassembly and stacking at different heights

Vehicle-Road Collaboration

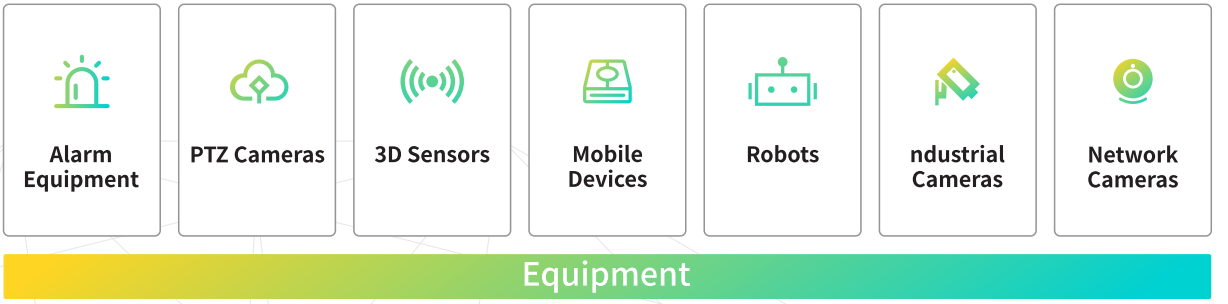
Intruder detection
Path interference detection. Automatic obstacle avoidance

Automated Loading and Unloading for Vehicles

Compatible with multiple vehicle types (wing body, flatbed, van)
Location planning for different cargoes

Constituent Elements

Hardware Equipment



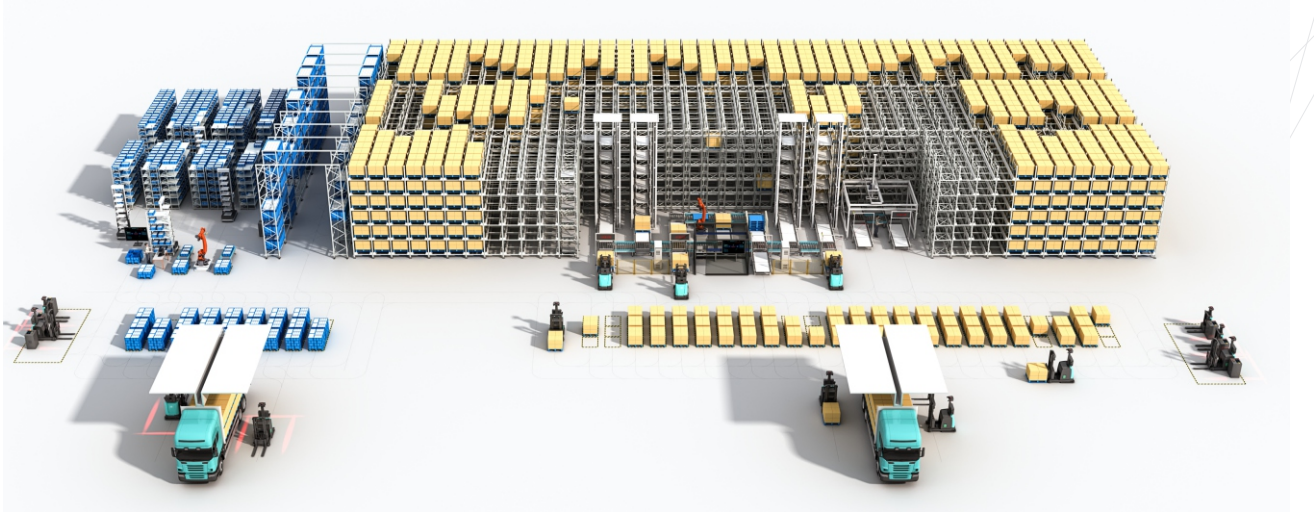
Analysis of Applications

Smart Factory Application

People | Vehicles | Cargoes | Fields

- Cameras
- Industrial Cameras
- Robots
- Mobile Devices
- Lidar
- PTZ Cameras
- Security Inspection Machine
- Alarm Equipment

Edge Data Collection



Real-time AI Computing with Cloud Data Integrated

Providing a Traceable Cloud Platform

Real-time Computing Platform

Data Visualization Platform

Intuitive and Intelligent Management Decision-Making

Visualized Analysis Platform

Flexible Configuration and Management of Edge Device Services in the Cloud

Make the Devices Manageable

O&M Management Platform

Multiway Robotics

Multiway Robotics, a leading intelligent intralogistics solution provider, with the mission of "Establish a new and efficient employment mode", is dedicated to drive continuous upgrades in social productive forces.

Global headquarter and laboratory are located in Shenzhen, China, with production facilities in Hefei. Multiway has also established subsidiaries in the United States, Germany, Japan, South Korea, and more, extending business, operations, and services to 30+ countries and regions worldwide.

Focusing on advanced robotics and AI technology, Multiway Robotics is committed to delivering cutting-edge intelligent manufacturing and smart logistics solutions to our customers. Multiway offers a comprehensive, integrated innovation delivery platform and solutions, ranging from core sensors and algorithms to self-developed unmanned forklifts and upper-level control systems. Hardware products include a full range of unmanned forklifts and four-way shuttle, while software systems encompass Multiway Cloud, WMS, RCS, WCS, on-site management systems, and various visual solutions.

After successfully delivering numerous benchmark projects in industries such as factories, warehousing, and logistics, Multiway has become a trusted and ongoing collaborative partner for many industry-leading customers.

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