GENTO

Gento Skye

Wheeled Lifting Robot

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Gento Skye is a full-body force control, control-rights-open humanoid robot development platform. Designed for Embodied AI, reinforcement learning, and real-world validation, it provides a stable, controllable, and expandable physical platform. The "cerebellum" is ready, allowing customers to focus on models/algorithms. Born for interaction with algorithms, data, and the real world.




Not brute force, but controlled compliance

This is a triple-safe humanoid platform based on full-body force control and impedance control. During collisions, contact, or abnormal force application, it can actively "relieve force" and adjust posture, realizing a humanoid robot platform truly capable of operating in real-world environments.

Platform Safety (Device Layer)	Personnel Safety (Human-Robot Collaboration Layer)	Environmental Safety (Scenario Layer)
In case of external collision or abnormal force application, the robot can actively respond compliantly, effectively preventing platform damage.	Automatically relieves force during human-robot contact or unexpected collision, significantly reducing impact risk.	Responds compliantly upon contact with the environment, avoiding rigid damage to equipment and the surrounding area.
Active anti-tipping, real-time calculation of the robot's stability margin, constantly maintaining balance through motion constraints and posture adjustments.	Meets the core safety requirements for personnel in close human-robot collaboration scenarios.	Suitable for safe interaction and long-term operation in complex spaces.

Industrial-grade Reliability - Designed for Long-term Training and Engineering Operations

Suitable for long-duration reinforcement learning training and high-frequency experimental iteration, without algorithm process interruption due to hardware instability.

- System-level design oriented towards Designed for 24/7 continuous operation scenarios.
- Low hardware heat generation, long-term stability of key components.
- Minimal sensor temperature drift, ensuring consistency and repeatability during long-term training and data acquisition.

Cerebellum ready — focus on algorithm innovation.

- You can focus on training the "brain," without building the "cerebellum" from scratch.
- Platform-level control and motion planning capabilities are already complete, allowing customers to skip complex low-level control and directly focus on model and algorithm development.

Every Execution is "as Precise as the Last One"

- The platform maintains stable and precise command execution capabilities under different operating conditions, delivering highly consistent action performance.
- Suitable for repeated training and long-term validation. Whether for strategy comparison or large-scale training, results are stable and credible, making every training session "meaningful and reusable."

Complete data collection and management capabilities to continuously accumulate real-world data assets.

This platform enables high-precision collection of robot and environmental data, supporting continuous accumulation of real-world data assets for Embodied AI and reinforcement learning.

Rich Proprioceptive Data:

Based on full-joint force control, it not only collects core data like position, velocity, and torque but also obtains multi-dimensional force information such as joint axial forces and end-effector forces, thereby supporting high-quality reinforcement learning and dynamic modeling.

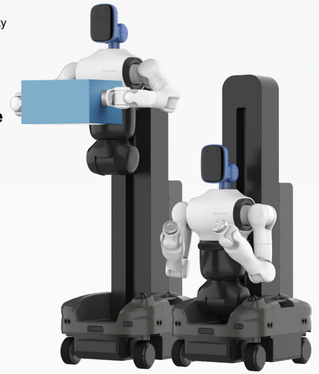
Synchronized Environmental Data:

Supports integration of various peripherals like cameras and tactile sensors for synchronized multi-angle, multi-modal environmental data collection.

Hardware Structure Advantages | Balancing efficiency, stability and engineering adaptability.

Wheeled Base: Balancing Mobility Efficiency and Overall Stability

Wheeled locomotion structure offers higher mobility efficiency and lower energy consumption in indoor and flat scenarios.
Low center of gravity design enhances anti-tipping capability and dynamic stability during operation.
Suitable for long-duration inspection, training, and high-frequency mobile tasks.



Lifting Mechanism: Adaptive Structure for Multiple Height Conditions

The lifting mechanism supports continuously adjustable height, enabling stable operation at various working heights.
Adapts to the spatial height and working posture requirements of different tasks.

Emotional Interaction

A unique expressive lighting system combined with visual recognition makes it not only intelligent but also more personable during reception tasks and operational scenarios.

Expressive Lighting System and Visual Recognition

Gento Skye

Product Specifications

Specification		Parameter
Overall Machine Basic Parameters	External Dimensions	670×548×1600mm (Collapsed State)
	Reachable Range	0-2000mm
	Total Weight	≈150kg
	Battery Life	4h
	Communication Interface	Wi-fi / EtherNet
	Total DoF	23 Dof (Excluding Gripper)
	Drive	Four-Wheel Drive + Four Steered Wheels, Omni-Directional Movement
	IP Rating	IP20
	Operating Temperature	-10 - 40℃
Head Parameters	Degree of Freedom	2 Dof (Pan/Tilt)
	Range of Motion	Rotation: ±90°, Tilt: +35°/-25°
	Maximum Speed	J1~J2:180°/s
	Communication Protocol	1kHz EtherCAT
	Brake Control (Braking Method)	Each Joint Is Equipped With A Brake
	Stereo Speaker	2x 4w Speaker
	Camera	RealSense D435 + 2 × Senyun SHW5G
	Head Camera Resolution	1280x720 @ 30fps
	Led Strip	RGB Light Strip as Standard
Torso Module	Camera	RGBD Selection
Lifting Parameters	Degree of Freedom	1 Dof
	Lifting Range	785mm-1685mm
	Rated Load	80kg
	Lifting Speed	0.2m/s
Waist Parameters	Degree of Freedom	2 Dof
	Force Control	Standard
	Repeat Positioning Accuracy	±0.05mm
	Range of Motion	Rotation: ±30°, Pitch: +90°/0°,
	Maximum Speed	150°/s
	Communication Protocol	1kHz EtherCAT
	Brake Control (Braking Method)	All joints with brakes
	Function	Position Control, Impedance Control

	Model	Marvin M6
Mechanical Arm Parameters	Degree of Freedom	7 Dof *2
	Force Control	Standard
	Rated Load (Single Arm)	6kg
	Working Radius (Axis J2 to End Flange)	696mm
	Tcp Maximum Speed	2m/s
	Repeatability	±0.03mm
	Force Repeatability	≤0.15N
	Range of Motion	J1: ±178°, J2:±120°,J3:±178°,J4:+60°/-145°, J5:±178°,J6:±60°,J7:±90°
	Maximum Speed	J1~J7:180°/s
	Communication Protocol	1kHz EtherCAT
	Brake Control (Braking Method)	All joints with brakes
	Function	Position Control, Impedance Control, Load Automatic Identification, Position Hybrid Control
	End-Effector Interface	Optional(RS485, Can fd, Ethercat, Can, 24V(3A), 48V) Force-
	End-Effector Camera	Standard(Senyun SHW5G Monocular Camera) Optional(RealSense D405GA Depth Camera)
	IP Rating	IP50
Mobile Chassis Parameters	Chassis Dimensions	L670mm*W548mm*H380.5mm
	RatedLoad	100kg
	Power Supply	Lithium Iron Phosphate Battery DC48v 34.4Ah
	Charging Method	Manual Charging/ Automatic Charging/ Battery Swap
	Charging Time	≤1.5h
	Speed	1.5m/s
	Climbing Angle	≤10°
	Stopping accuracy	±20mm (Position), ±1° (Angle)
	Navigation System	Livox MID-360S, MID-3D LiDAR 3D LiDAR, Diagonally Mounted Ultrasonic sensors distributed at front/rear/left/right, 2 units for each side
	Charging Station	Optional
	Function	3D LiDAR, Including Algorithms, Supports Navigation Planning, Dynamic Obstacle Avoidance, Autonomous Positioning, Map Building, Automatic Charging, And Navigation Across Floors or Through Automatic Doors
Brain	Perception Fusion And Reasoning	Nvidia Jetson orin 32g/64g
Cerebellum	Motion Control	X86 Controller

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