

magiclab

MagicBot Z1

MagicLab's Bipedal Humanoid Robot

The Intelligent & Agile Mini Hero: Defining a New Dimension of Product Value for Humanoid Robots!



<https://www.magiclab.top/en/z1>

Product Introduction

MagicBot Z1 is a highly dynamic bipedal humanoid robot capable of flexible full-body dynamic movement, possessing intelligent perception, navigation, and interaction capabilities. Its core technologies, including joint modules and motion control algorithms, are all self-developed across the entire stack, and it maintains a leading position in cutting-edge technologies such as imitation reinforcement learning and multimodal VLM intelligent interaction large-scale models. MagicBot Z1 is widely used in scientific research and education, exhibitions and cultural tourism, commercial performances and entertainment, and other scenarios.

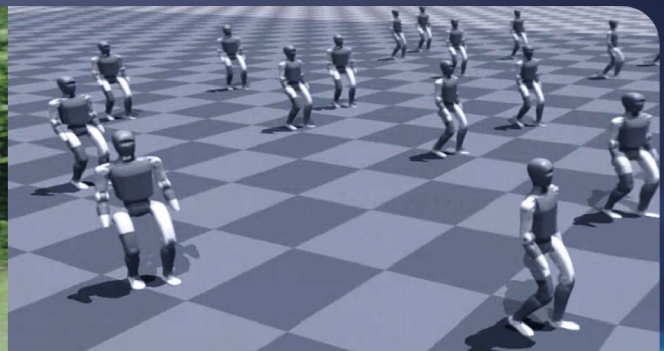
High-Performance, Highly Reliable Body



Top-tier Motion Performance: 50 bionic joints, a 320° ultra-wide range of motion, and a powerful 130 N·m torque, easily performing complex movements such as whirlwind kicks and butterfly kicks, providing strong support for high-dynamic motion research and development/applications.

Industrial-Grade Durability: Aviation-grade aluminum alloy + engineering plastic body, shock and impact resistant; intelligent air-cooling system, allowing for sustained high-intensity operation; reduced maintenance costs, allowing you to focus on your core tasks without distraction.

Open AI Ecosystem



Rapid Development, Human-like Upgrades: Powered by multi-source databases, learn new movements in 20 minutes, improving both training efficiency and human-like performance.

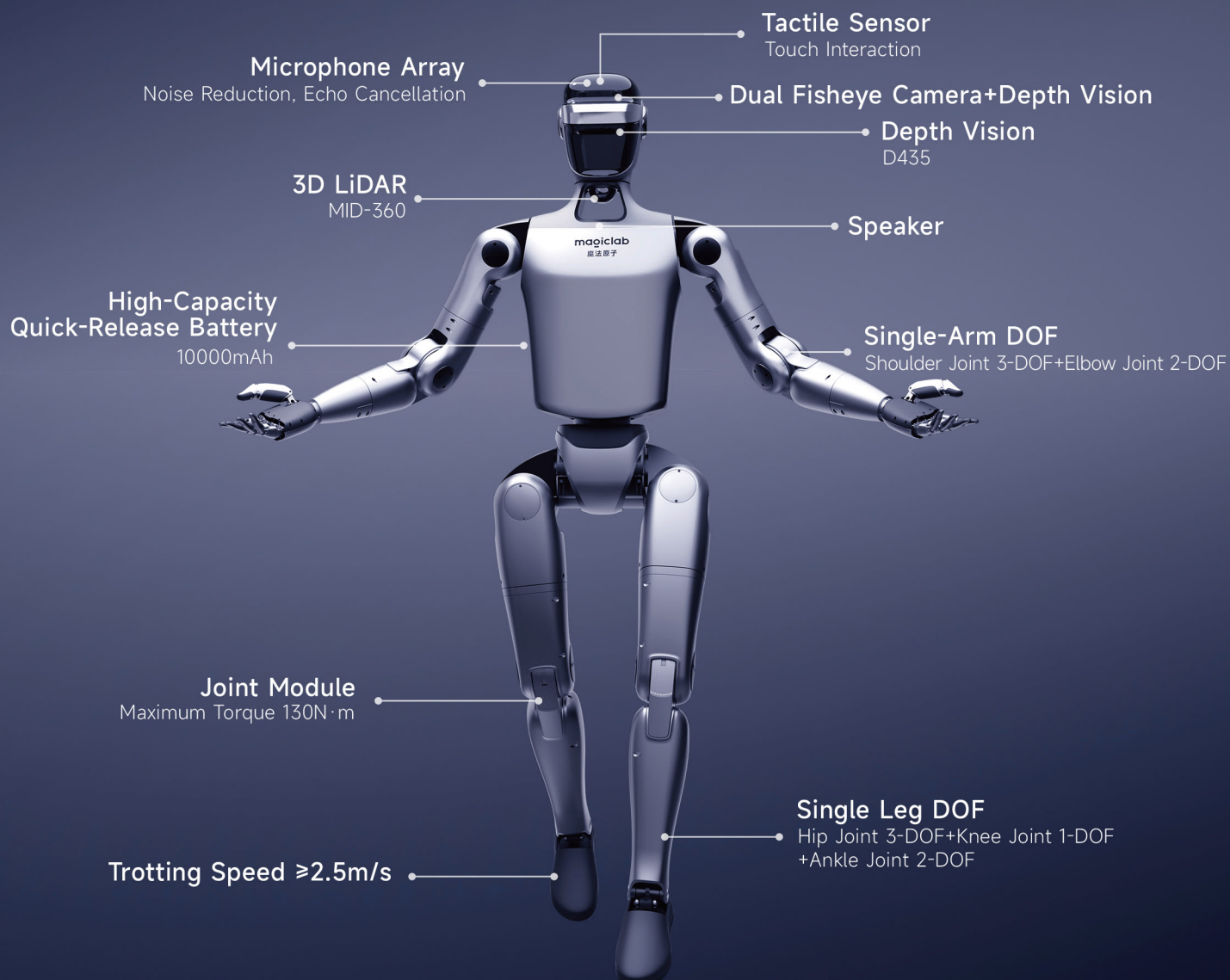
Rich Hardware, Freely Expandable: Standard configuration includes LiDAR, binocular cameras, and other sensors, expandable to a 7-DOF arm and dexterous hand, unlocking limitless innovation possibilities.

Parameter Introduction

Specifications	Z1 Developer Edition	Head Z-axis range of motion	±40°
Height/Width/Depth (standing)	1369*422*200mm	Waist Z-axis range of motion	±160°
Weight (with battery)	40kg+	Knee joint range of motion	0~152°
Total DOF (joint motors)	24 - 50	Hip joint range of motion	P±160°、R-30~+110°、Y±160°
Head DOF	1	Base Computing Unit	8-Core High-Performance CPU
Waist DOF	1	High-Performance Computing Module	Optional
Single Leg DOF	6	Perception Sensor	3D LiDAR+Depth Vision+Dual Fisheye Camera+Head Tactile Sensor
Single Arm DOF	5+ (Optional 2 Arm DOF)	Smart Battery (Quick-Release)	10000mAh
Dexterous Hand DOF	Optional 11-DOF Tactile Dexterous Hand	OTA	Support
Max Knee Torque*	130N·m	Secondary Development Kit	Support
Max Arm Payload*	3kg	Motion Demonstration	Anthropomorphic Walking, Anthropomorphic Running and Automatic Fall Recovery
Lower Leg+Thigh Length	0.6m	Voice Interaction	Voice Command、Chatbots
Arm Span	0.5m	Advanced Function	Exhibition Guide

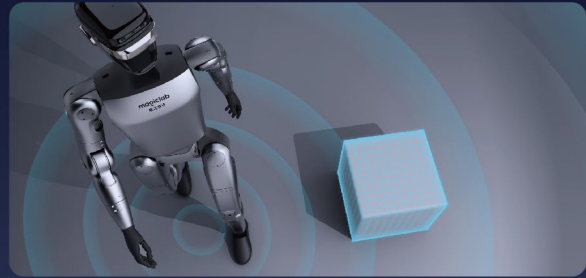
*Maximum torque, arm payload, and endurance time are measured under laboratory conditions.

*Specifications may vary across different application scenarios and hardware configurations. Actual performance shall prevail.



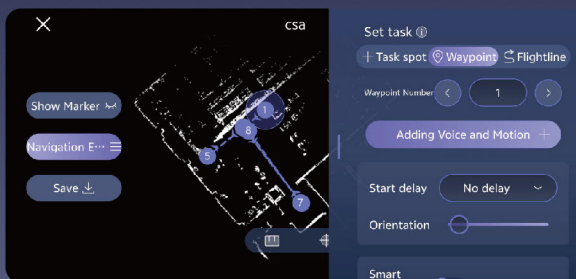
Autonomous Navigation Function

It has the functions of rapid cart mapping, visual map editing and waypoint marking; the robot can realize autonomous navigation and dynamic obstacle avoidance, and move smoothly and safely in various scenarios, greatly reducing the complexity of deployment and operation and maintenance.



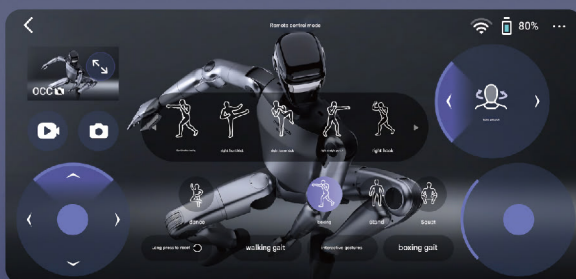
Intelligent Guide Function

Provides guided visual guide configuration, allowing easy design of the tour process through the APP. It supports intelligent action generation, large screen interaction, walk-through narration, and guest reception, and is compatible with custom voice, actions and knowledge base, realizing a one-stop intelligent guide service and improving interactive experience and operational efficiency.



Performance and Entertainment Functions

Users can easily access various performance modes, including dynamic dance, agile martial arts, cool stunts, and powerful boxing, via the app or remote control. The movements are fluid and precise, suitable for a variety of offline events, easily attracting audience attention and achieving on-site interaction and brand promotion.



Remote Control Special Effects Functions

Supports various interactive gestures such as salute, flying kiss, and hug, allowing the audience to have a more vivid and interesting interactive experience; It has the functions of switching between squatting, sitting and standing, as well as squatting and sitting power on/off, which can realize quick power replacement and power on/off without the need for a hoist, greatly improving work efficiency and convenience.



Application Scenarios

Scientific Research and Education

With its stable and reliable hardware, rich SDK interfaces, and detailed operation and control deployment routines, MagicBot Z1 can serve as an efficient hardware platform for verifying algorithms in cutting-edge scientific research projects such as imitation learning and reinforcement learning. It significantly reduces the threshold for research and development and debugging, and helps universities and research institutions accelerate the application of theories and the transformation of research results.



Exhibition and Cultural Tourism

Based on its all-domain environmental perception and autonomous navigation capabilities, combined with easy-to-use guided tour configuration tools and customizable voice, actions, and knowledge base, MagicBot Z1 is suitable for intelligent tour services in corporate showrooms, museums, science and technology museums, and cultural and tourism attractions. While enhancing the visitor experience and interactive fun, it effectively shapes an image of advanced technology and enhances the reputation of the venue.



Commercial Entertainment

Offering a variety of performance content including dynamic dance, agile martial arts, powerful boxing, and cool stunts, the MagicBot Z1 can be flexibly applied to entertainment performance occasions such as store promotions, annual celebrations, industry summits, and campus events. It attracts attention and gathers popularity with its technologically advanced performances, achieving a dual enhancement of brand exposure and event promotion.



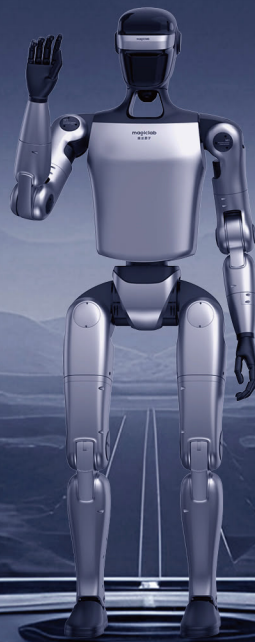
Boundless Scenarios

We offer full support for secondary development, helping customers to deeply integrate and expand functionality according to their needs, jointly exploring more business scenarios and long-tail applications. No matter how innovative the application direction, we will continue to provide reliable technical support, always remaining a solid backing on your exploration journey.



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Empowering Every Corner of the Earth with General-Purpose Robotics



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