

Unitree R1 - on RBTX®

The Unitree R1 is a compact, autonomous service robot that combines state-of-the-art AI technology with precise mechanics and intuitive control system. It was developed to efficiently master everyday tasks, interactions and transport processes at a price that makes it attractive for companies, restaurants, care facilities and smart households. Thanks to its modular design and intelligent software, the R1 is suitable for a wide range of applications: from service and logistics to reception, customer support, and assistance in care and hospitality.



UNITREE

Software and control system

- AI-controlled movements through imitation and reinforcement learning
- ROS-compatible, EDU versions with SDKs and APIs for developers
- OTA updates and optimised development environment

Technical highlights

	Description
Compact design	1.32m high, approx. 35kg - robust and easy to transport
Degrees of freedom	Base: 23 DOF EDU version up to 43 DOF for natural movements
Powerful drives	High-performance PMS motors with precise torque control system, up to 120Nm
Battery and runtime	Lithium battery with ≈9,000mAh for up to 2 hours of use with 2 hours charging time
Sensor technology	3D LIDAR, depth camera, microphones and loudspeakers for environmental perception
Processor performance	8-core CPU EDU version with NVIDIA Jetson Orin for AI boost with 100 tops

Part No. RBTX®	Abbreviation	Note
RBTX-UNIT-0022	R1 Base	
RBTX-UNIT-0023	R1 EDU U1	
RBTX-UNIT-0024	R1 EDU U2	
RBTX-UNIT-0025	R1 EDU U3	Available from approx. end of Q2 2026
RBTX-UNIT-0026	R1 EDU U4	
RBTX-UNIT-0027	R1 EDU U5	
RBTX-UNIT-0028	R1 EDU U6	

Wide range of options

Unitree R1 | Basic version

The basic model in the series helps you get started with humanoid robotics and simple demonstrations.

Unitree R1 EDU | U1 standard version

The version for education and development builds on the basic model.

Unitree R1 EDU | U2 smart version

This extended version has additional degrees of freedom at the wrists. The following versions are based on this model and differ only in the hand supplied:

- **R1 EDU | U3:** with 3-finger hands (Dex3-1), without tactile sensors - for basic gripping tasks
- **R1 EDU | U4:** with 3-finger hands (Dex3-1), with tactile sensors - for more precise interactions
- **R1 EDU | U5:** with 5-finger hands (Revo 2 Basic), without tactile sensors - for realistic hand movements
- **R1 EDU | U6:** with 5-finger hands (Revo 2 Touch), with tactile sensors - for more precise interactions

Technical data

	Basic version R1 Base	Standard version R1 EDU U1
Total DOF	26	26
Max. load capacity [kg]	2	2
Wrists	-	-
Open source, AI	-	●
NVIDIA Orin NX	-	40 tops
Humanoid hands	-	-
Camera	Binocular	Binocular

	Smart version				
	R1 EDU U2	R1 EDU U3	R1 EDU U4	R1 EDU U5	R1 EDU U6
Total DOF	26	40	40	38	38
Max. load capacity [kg]	2	2	2	2	2
Wrists	-	-	-	-	-
Open source, AI	●	●	●	●	●
NVIDIA Orin NX	100 tops	100 tops	100 tops	100 tops	100 tops
Humanoid hands	-	●	●	●	●
Tactile sensors	-	-	●	-	●
Camera	Binocular	Binocular	Binocular	Binocular	Binocular