FOURIER

Fourier GR-2

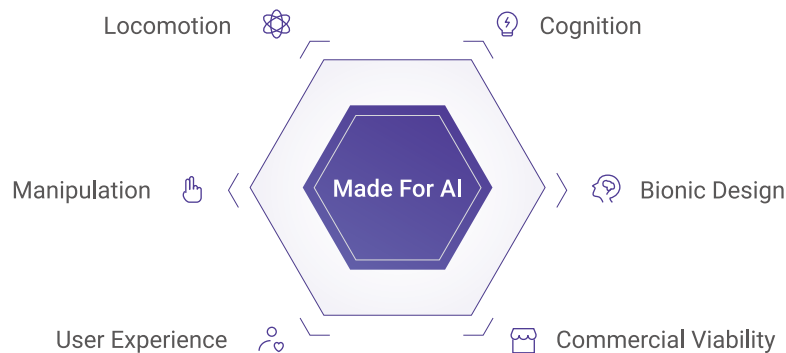## New Milestone of Humanoid Robotics

A New Milestone of GRx Humanoid Robot Series

- Driven by the idea of "developing the most accessible embodied agent for AI", Fourier GR-2 showcases remarkable upgrades across hardware, design, software, and commercial applications.

- More Agile, More Powerful, More Open.

Six Core Values of GRx Series

Guided by our philosophy of "Made for AI", Fourier has crafted six core values for GRx Series, refining the robot into its most ideal and capable form. We are committed to the mission of empowering every developer and AI user with cutting-edge, full-stack robotics technology.

Locomotion   Cognition

Manipulation   **Made For AI**   Bionic Design

User Experience   Commercial Viability

# Practical Solutions for Real-World Applications

Fueled by first-hand data and direct customer feedback, our R&D team is constantly pushing the limits of what's possible in humanoid robotics. Partnering with industry leaders, Fourier's GRx robots provide groundbreaking solutions across diverse sectors, including academic research, reception services, manufacturing, and rehabilitation.
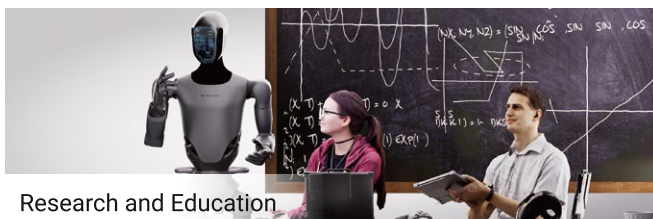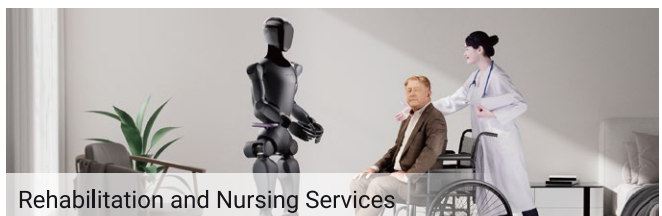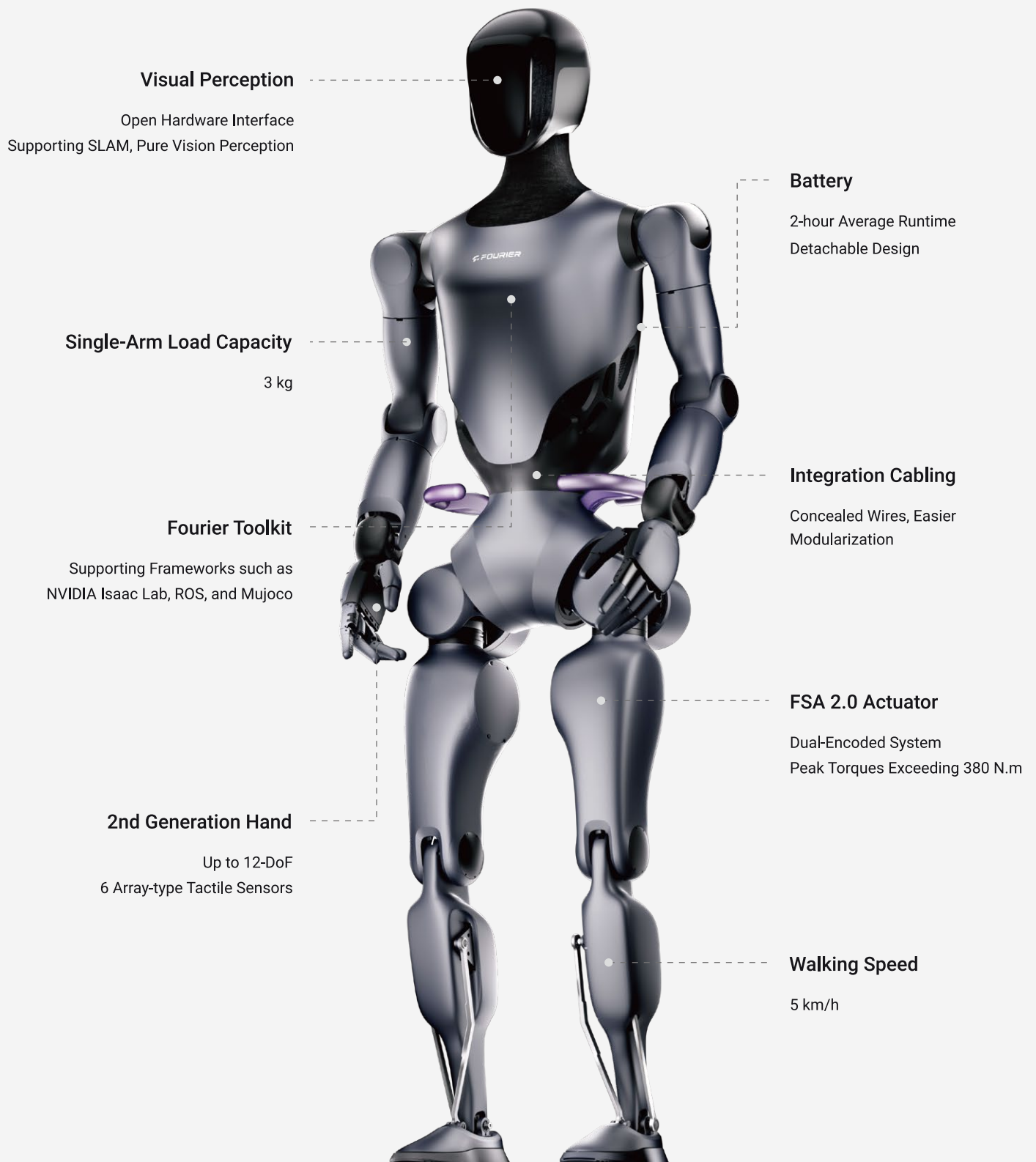
Research and Education
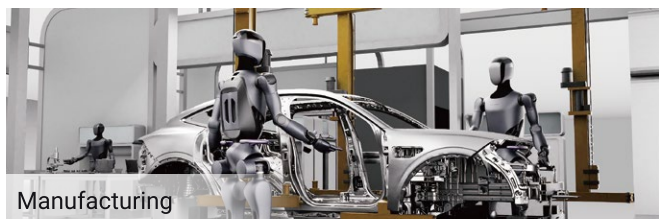
Manufacturing
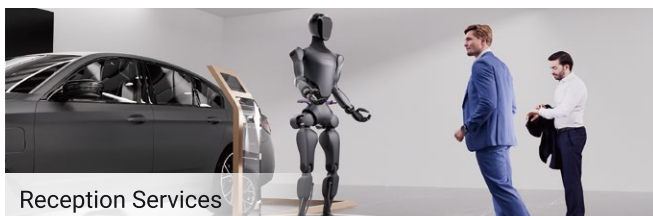
Reception Services

Rehabilitation and Nursing Services

Fourier GR-2

With up to 53 degrees of freedom in its versatile body structure, GR-2 can simulate a wide range of human movements, including torso rotation, grasping, walking, and getting up from the ground.

Visual Perception

Open Hardware Interface
Supporting SLAM, Pure Vision Perception

Battery

2-hour Average Runtime
Detachable Design

Single-Arm Load Capacity

3 kg

Integration Cabling

Concealed Wires, Easier
Modularization

Fourier Toolkit

Supporting Frameworks such as
NVIDIA Isaac Lab, ROS, and Mujoco

FSA 2.0 Actuator

Dual-Encoded System
Peak Torques Exceeding 380 N.m

2nd Generation Hand

Up to 12-DoF
6 Array-type Tactile Sensors

Walking Speed

5 km/h

Innovative, Reliable, Accessible

Innovation drives us at Fourier. We push the boundaries of agility, precision, and perception by prioritizing reliable solutions over complexity.

12-Degree-of-Freedom Dexterous Hands: Precision in Motion

Equipped with six array-type tactile sensors, GR-2 can sense force, identify object shapes and materials, and adjust its grip in real time for optimal manipulation in dynamic settings.
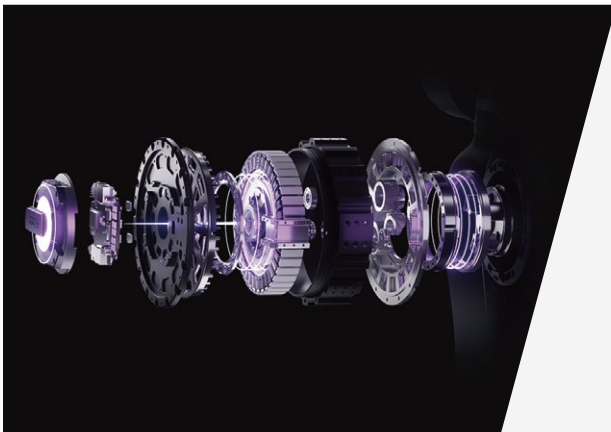
◎ 12-DoF Hands   ⊡ 6 Array-type Tactile Sensors

FSA 2.0 Actuator: Powering Dynamic Mobility

With peak torques exceeding 380 N.m, FSA 2.0 boosts GR-2's agility and dynamic capabilities. The dual-encoder system doubles control accuracy, ensuring precise movements even in high-pressure environments.

Fourier Toolkit: Optimized Tools for Innovative Development

Fourier prioritizes developer's experience. The upgraded software development kit allows developers to have easy access to a robust suite of pre-optimized modules through intuitive APIs.

The platform supports frameworks such as NVIDIA Isaac Lab, ROS, and Mujoco.

Technical Specifications

Mechanical Spec.	Height, Length, and Width	1750 mm x 552 mm x 275 mm		Arm Reach	1860 mm
	Lower-Limb	406 mm + 378 mm		Weight	≈ 63 kg
	Material	Aluminium Alloy + Engineering Plastic			
Electronic Spec.	Supply Voltage	46.2 V		Max. Power Output	≈ 550 W
Performance	Max. Speed	5 km/h		Single-Handed Payload	≈ 3 kg
	Standard Computing Power	8-Core High Performance CPU			
	High-Performance Computing Power Module (Optional)	Plus 275 Tops Computing Unit			
Joint Spec.	# of Actuators	Up to 53 (12-DoF Dexterous Hand Version)			
	Degrees of Freedom	Head	2	Single Leg	6
		Waist	1	Single Arm	7
		Basic Dexterous Hand	6		
		Enhanced Dexterous Hand (Optional)	12		
	Joint Motion Range	Waist Z-axis Joint	±150°	Knee Joint	-5° to 135°
		Hip Joint	Pitch ±150°, Roll -24° to 90°, Yaw -40° to 90°		
	Max. Torque	380 N.m		Backlash	< 10 Arcmin
	Bi-Encoder	16-bit/14-bit (Leg) 24-bit/24-bit (Arm)		Communication Protocol	Ethernet
Battery	Battery Capacity	1100 Wh		Battery Type	Lithium-Ion Battery
	Total Weight	≤ 9 kg		Nominal Voltage	39.6 V
	Charging Voltage Limit	46.2 V		Life Cycle	≥ 500 (80% DOD)
	Average Runtime	≈ 2 h		Charging Time	≈ 3 h
	Adapter Input Parameters	100-240 V, 50/60 Hz		Adapter Output Parameters	46 V, 8 A MAX
Central Processing Unit	Operating System	Ubuntu 20.04		Processor	Intel® Core™ i7 (8-Core)
	I/O Ports	HDMI			
Interaction Capabilities	Teleoperation	Real-time Remote Control Systems (Pico/VisionPro)			
	Voice Interaction	Supports echo elimination and other interaction functions.			
Sensor Spec.	Camera	Stereo Camera			
	IMU Sensor	6-axis IMU (3-axis Acceleration & 3-axis Gyroscope)			

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Leverage full-stack robotics technology to enrich people's life.

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