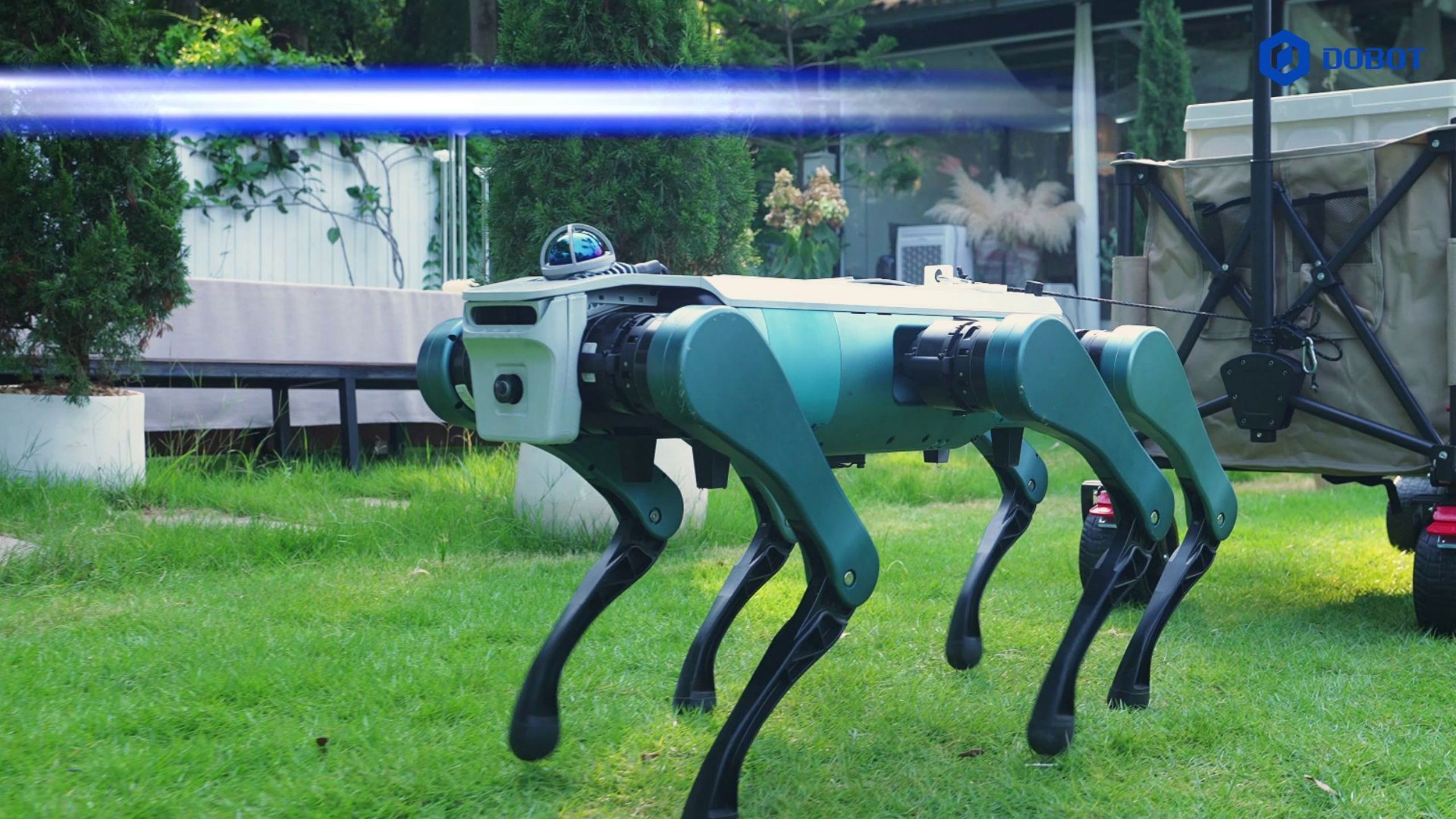
DOBOT

# DOBOT Hexplorer

## Six-legged Bionic Robot

## Product Introduction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# Product Specifications

**Legged Mobile Platform** built for **Education/Research**, **Public Services** and **Lightweight Inspection Applications**.

Weight: Approx. 20kg (net, without arm)

Payload: Rated≤ **10 kg**, Max **15 kg**

Joint Peak Torque: **33 Nm** (knee joint)

Max Obstacle Height: **20 cm**

Max Slope Adaptivity: **40°**

Battery Capacity: 504wh, Battery Life: **2.5h**

# Components

## Standard

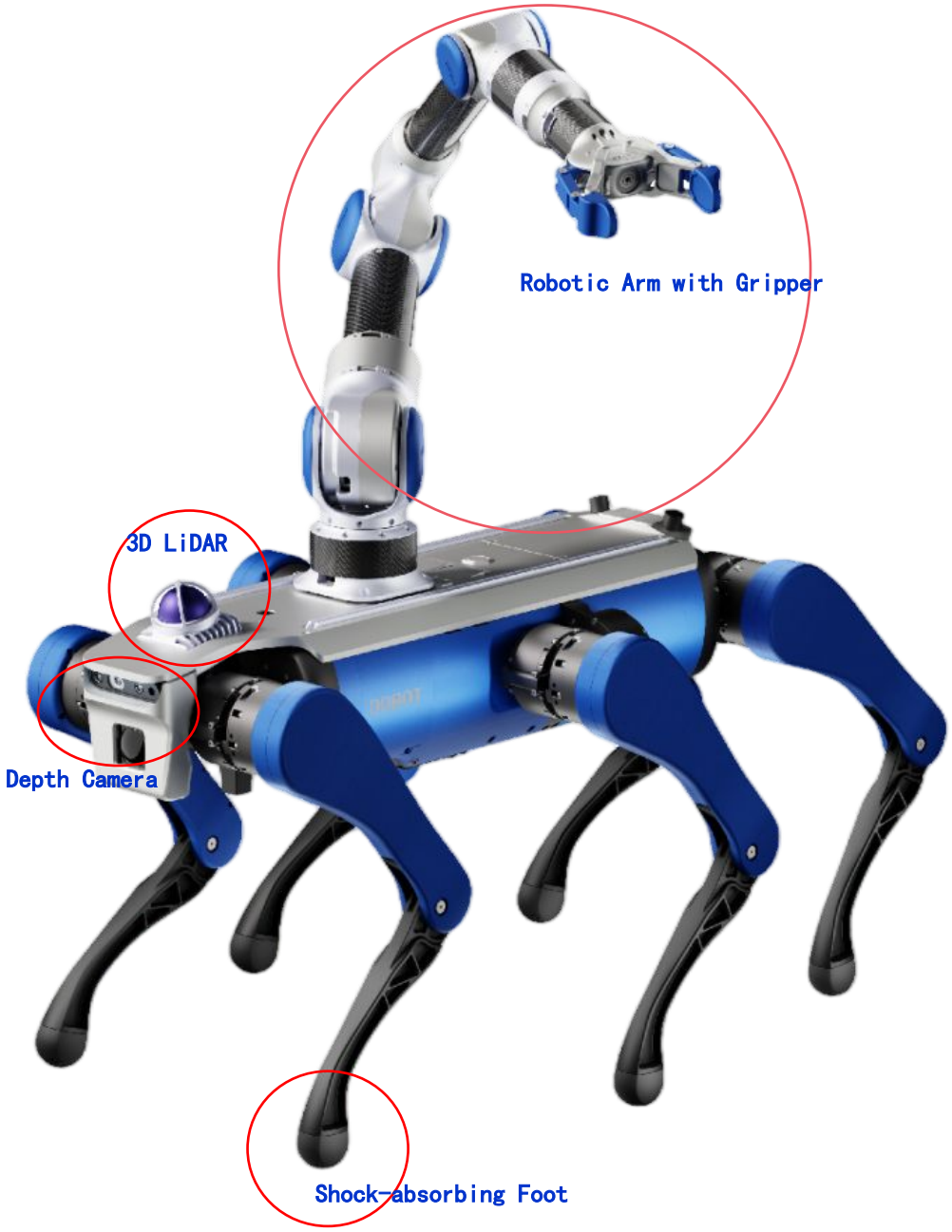
3Dof Legs*6

3D LiDAR

Depth Camera

Shock-absorbing Foot

Inertial Measurement Unit




## Future Extensions

Robotic Arm with Gripper

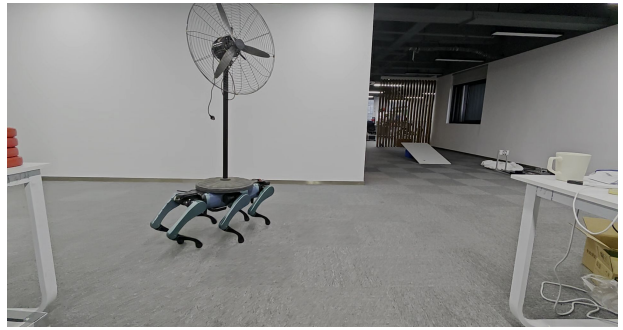
Remote Control/Image Transmission

Autonomous Charging

# Features

## Bionic Six-legged Design for Enhanced Stability

With its biologically inspired six-legged design, DOBOT Hexplorer uses a stable tripod gait that keeps three legs grounded at all times. Dynamic center-of-gravity control and anti-disturbance algorithms minimize posture fluctuations and enable autonomous self-recovery in complex environments. This ensures excellent stability, anti-tip performance, and shock resistance—ideal for slippery, uneven, or narrow-ground scenarios.



Upper body stability

Disturbance resistency

## High Payload and Modular Expansion

DOBOT Hexplorer features a lightweight, high-strength frame and high-torque motors, supporting up to 10 kg payload and pulling loads five times its own weight. Its modular design enables easy integration with robotic arms, sensors, and instruments—ideal for mobile tasks in research, inspection, and field operations.

*Actual payload may vary based on test conditions.

Payload capacity

Stairs traversability

## Quiet and Human-Friendly Operation

With a low-impact gait and noise-optimized motors, DOBOT Hexplorer moves smoothly and quietly, reaching noise levels as low as 50 dB. It's designed for quiet environments where humans and robots work side by side.

*Test environment: thin carpeted floor.
*Test distance: sound level meter positioned approximately 1 meter from the product.

Unstable terrain traversability

Slope traversability

## Smart Sensing and Terrain Adaptability

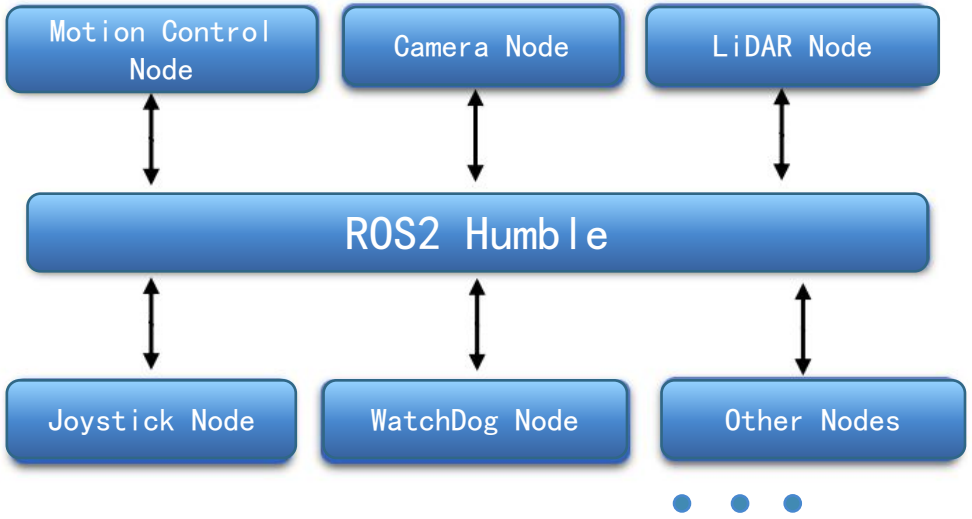
Powered by AI-driven control, DOBOT Hexplorer combines LiDAR, depth cameras, IMUs, and proprioceptive sensing for real-time terrain sensing and adaptive gait adjustment. It handles slopes and uneven surfaces with speed and agility.

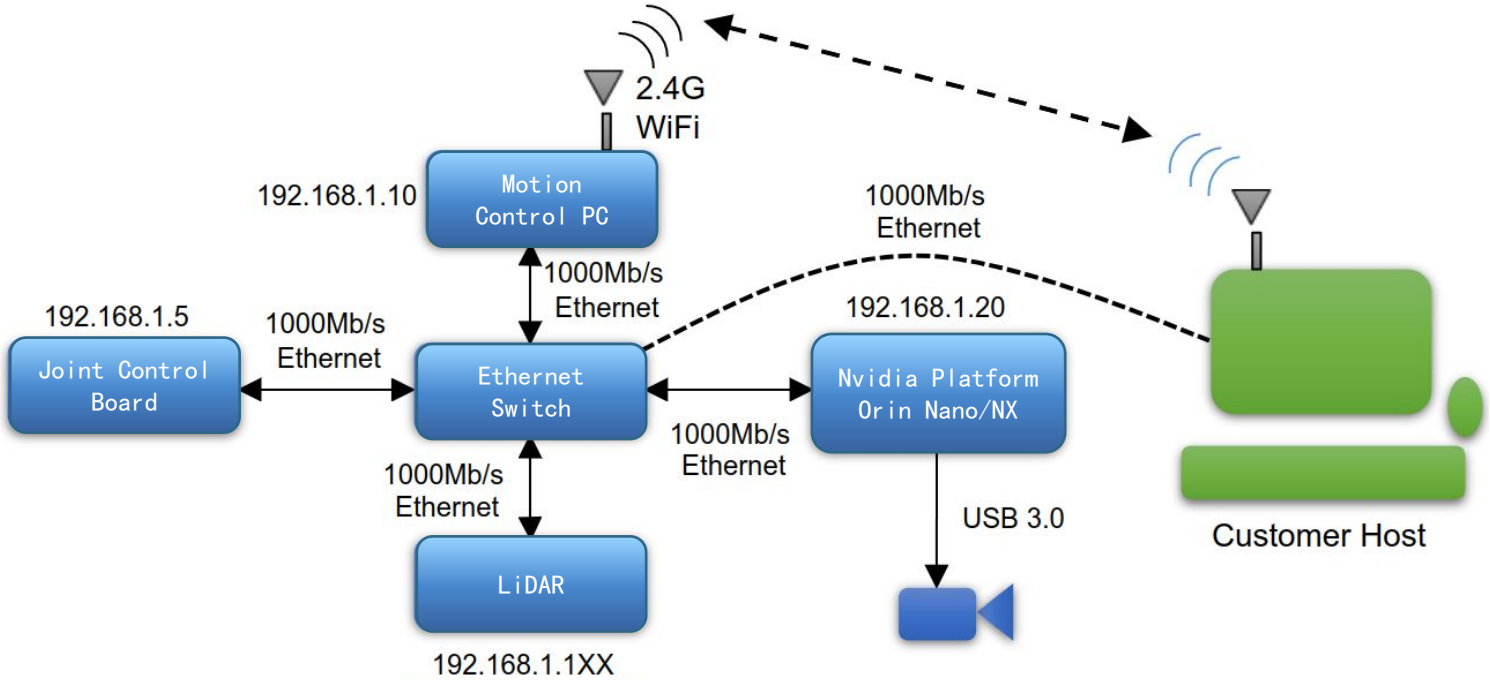
# Shipping list

| Item | Remarks |
| --- | --- |
| DOBOT Hexplorer Six-legged Bionic Robot | Standard configuration includes depth camera, LiDAR, built-in battery, adapter, and wireless remote controller. |
| Remote Operation & Image Transmission Kit | Optional (To be released later) |
| Wireless Auto-Charging Kit | Optional (To be released later) |
| Collaborative Arm Integration Kit | Optional (To be released later) |

Note: Battery built inside, can not remove it.

# Secondary Development




Linux Ubuntu 22.04 ROS2

High-Level SDK: Control Robot State, Speed, etc.

Low-Level SDK: Control Joint Torque, Vel, Pos, etc.

Simulation SDK: Motion Control/Visualization in Mujoco

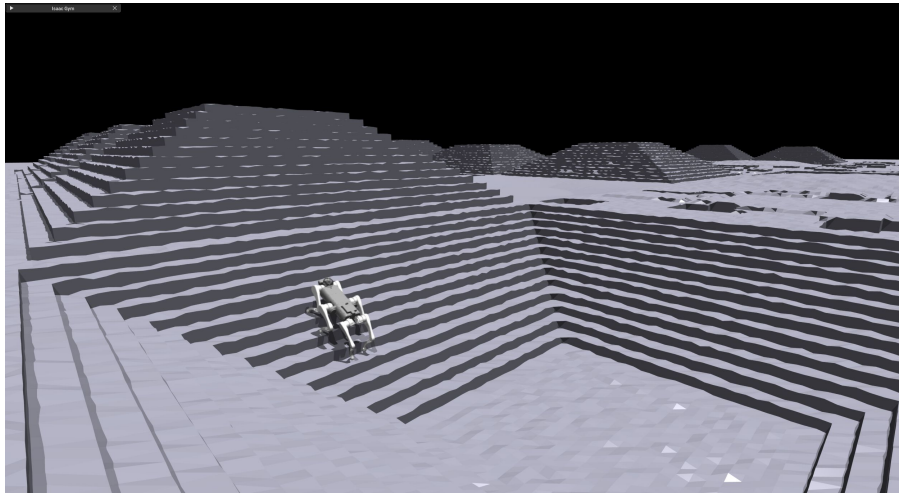
Motion Control PC: Locomotion Control Development

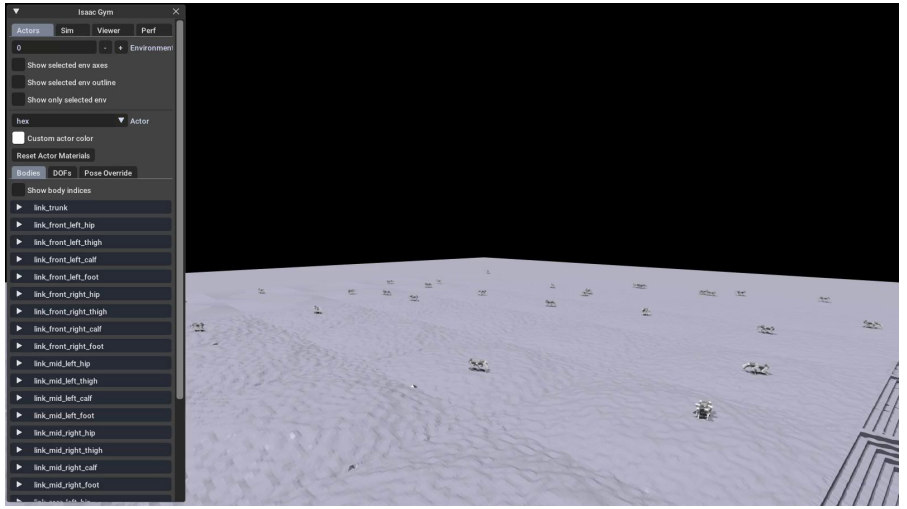
Nvidia Platform: Perception/AI related Development

# Secondary Development

**From Simulation to Reality**

- **Simulation**
  - Build virtual robot dog models
  - Test kinematics and environmental adaptability
- **Training**
  - Apply AI algorithms (path planning, object detection)
  - Reinforcement learning / deep learning training
- **Real Deployment**
  - Transfer models to the physical robot
  - Field testing and optimization
- Third party partners for developing this robot dog is recommended.



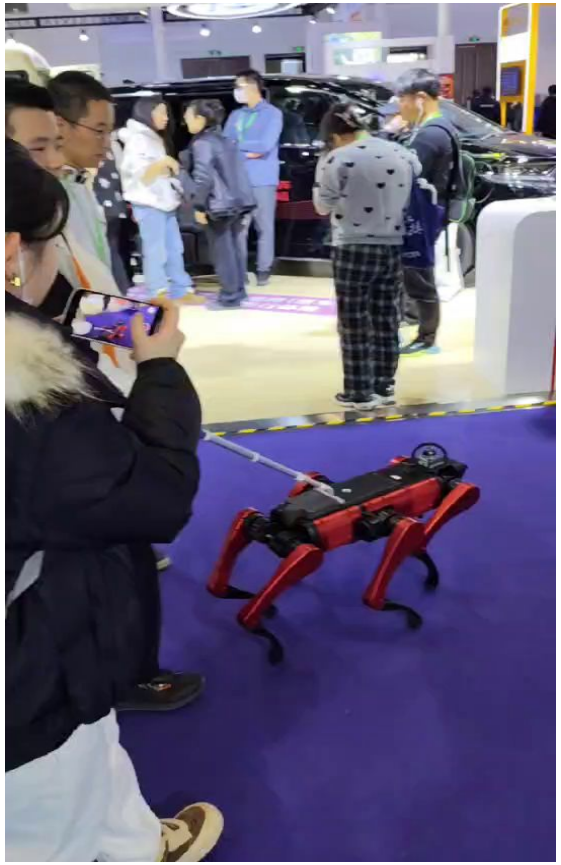


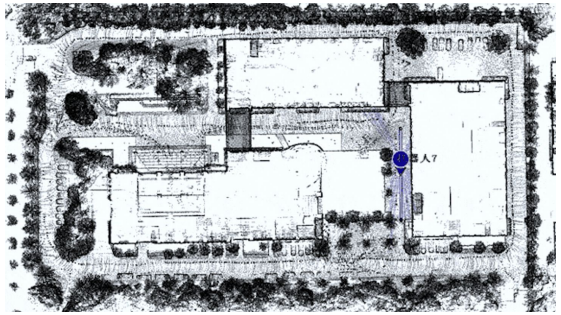

# Customer Case

## University Customer Robotic Guide Dog of SJTU

- Stick traction with less shaking.
- Walking quietly.
- Rapid implementation using high-level SDK.





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# Thank you

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