

Quadruped Robots **Academia & Education Solution**

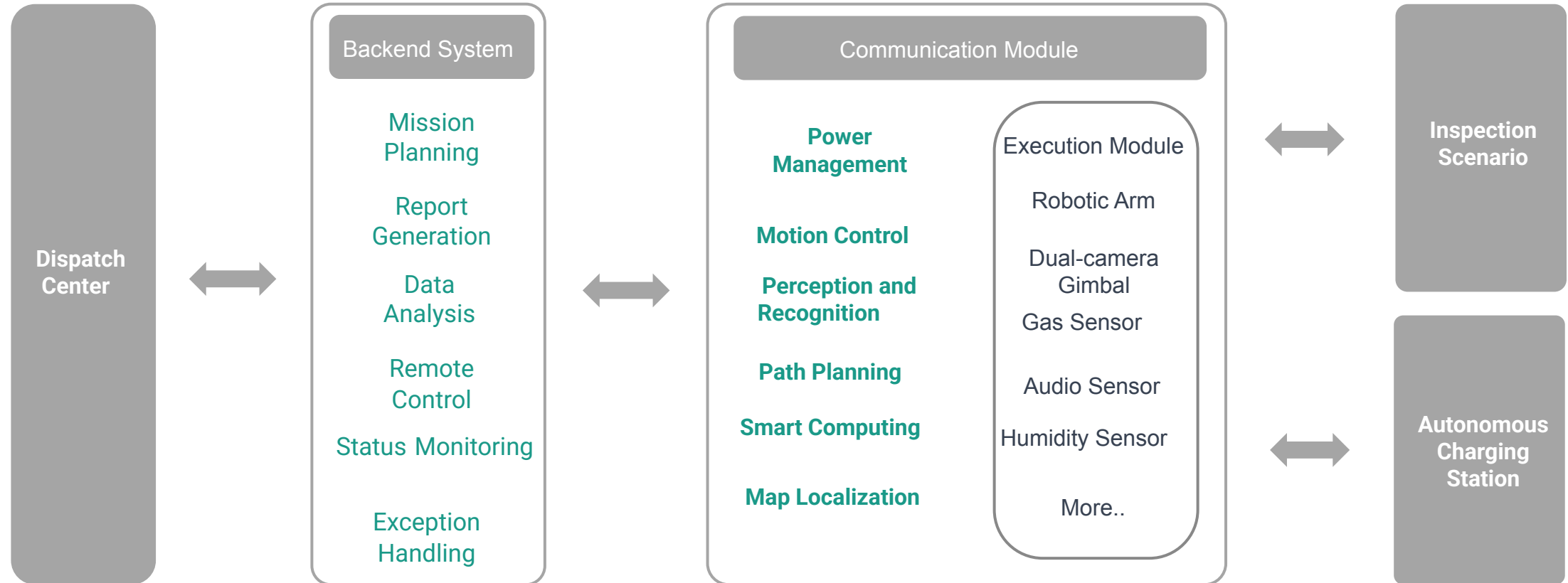
*Advanced quadruped robotics platform designed specifically for academic research and educational environments.
Combining cutting-edge technology with accessible development tools for the next generation of roboticists.*



DEEP Robotics



Function Structure



Application Scenarios



Research Labs



Perfect for robotics research exploring motion dynamics, AI integration, and environmental sensing.

STEM Education



Provides hands-on learning in programming, robotics engineering, and AI applications.

Robotics Competitions



Ideal platform for student competitions in robot design, programming, and problem-solving.

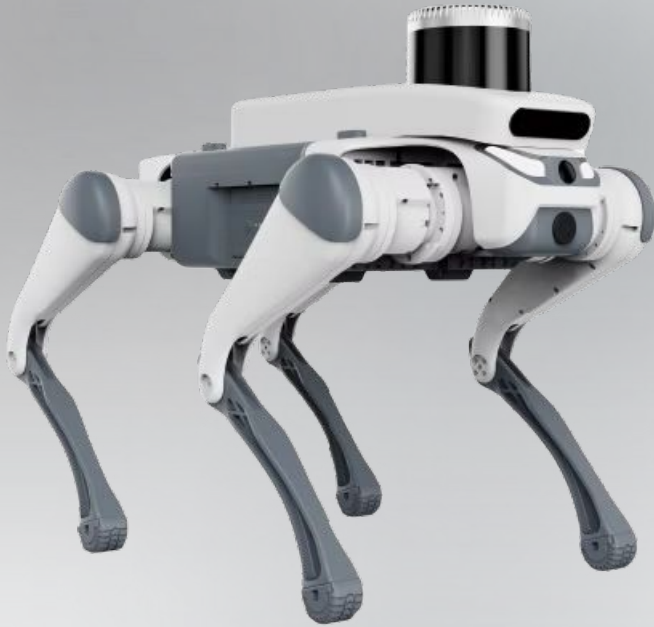
Innovation Centers



Supports technology demonstrations and cross-disciplinary innovation projects.



SID1 – Lite3 Series



Venture

Entry-level model perfect for basic robotics education and motion training applications.

Pro

Advanced model with enhanced computing capabilities for deeper AI and machine learning projects.

Lidar

Specialized version with integrated LiDAR for environmental mapping and autonomous navigation research.



*All-terrain
Adaptation*



*Powerful
Expansion*



*Autonomous
Navigation*



*Environment
Reconstruction*



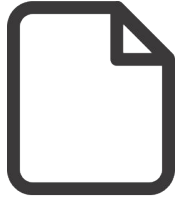


Technical Parameters

Models	Venture	Pro	LIDAR
Package	–	<i>ROS + 1 year License BOW</i>	
Standing Size	<i>610 × 370 × 445 mm</i>	<i>610 × 370 × 445 mm</i>	<i>610 × 370 × 503 mm</i>
Load Capacity	<i>7 kg</i>	<i>7 kg</i>	<i>7 kg</i>
Weight	<i>12.2 kg</i>	<i>12.2 kg</i>	<i>12.2 kg</i>
Max Slope	<i>40°</i>	<i>40°</i>	<i>40°</i>
Stair Height	<i>15cm</i>	<i>15cm</i>	<i>15cm</i>



Development Support



Development Manual

Comprehensive user manuals

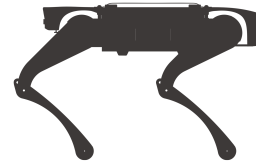
- Product usage guides
- Software interface documentation
- Motion & perception development guides



Secondary Development

Complete SDK package

- Motion SDK & API
- Perception software interfaces
- Recognition, tracking & navigation source code
- Built-in ROS system for efficient development



Simulation Capabilities

Advanced simulation support

- URDF simulation models
- Motion development demos
- Kinematic & dynamic simulations
- Compatible with major simulation platforms



Control Platform

Android Control App Features

- Real-time video streaming with minimal latency
- Intuitive motion control interface
- One-click access to:
 - Voice control
 - Obstacle detection
 - Advanced functions





Human-Machine Interaction

1

Advanced Gaits

- Jumping and flipping
- Dancing capabilities
- Self-recovery after falls
- Crawling functionality

2

Feedback Systems

- Built-in speaker system
- LED light strip integration
- Synchronized music and lighting effects

3

Customization

- Hands-on component assembly
- Programming experience
- Customization opportunities

4

Industry Integration

- Adaptable for various industries
- Supports laboratory work
- Enables curriculum development





BOW: Making Robotics Accessible



Multiple Programming Languages

Program robots using C#, Python, or C++



Cross-Platform Development

Build applications on Windows or Linux systems



Simulation to Reality

Seamless transition between virtual and physical robots



Universal Codebase

One SDK works across all InMotion robot models



BOW: Real-time Robot Control & Visualization

Key Features

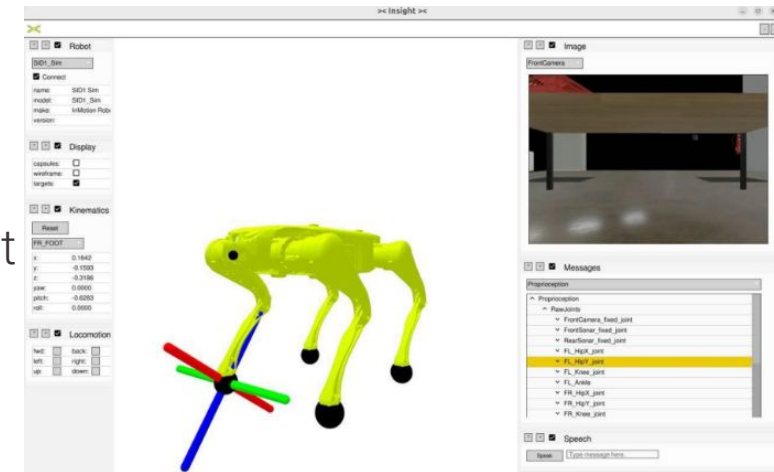
- Real-time control and visualization
- User-friendly SDK with comprehensive tools
- Hardware-agnostic development

Technical Capabilities

- Universal SDK command conversion
- Local network and Internet control
- Minimal latency operation

Developer Support

- Dedicated expert assistance
- Cross-platform compatibility
- Automatic BOW-enabled robot compatibility



Expandable Modules



LiDAR Module

16-line:

- Detection Range: 100 m @10% 150 m @70%
- 3D-SLAM algorithm development for map creation, navigation, and obstacle avoidance.
- Multi-sensor fusion algorithms involving depth cameras, inertial navigation systems, and LiDAR, enabling more precise navigation, positioning, path planning, and obstacle avoidance.



Depth Camera

Monocular color images, stereo grayscale images, depth point clouds, and internal IMU data output.

Can be used for:

- Visual SLAM and terrain mapping development.
- Color image resolution: 1920x1080 @30FPS.
- Grayscale image resolution: 1280x720 @30FPS.
- Depth point cloud resolution: 1280x720 @30FPS.
- 2.5D terrain mapping and visual algorithm development.



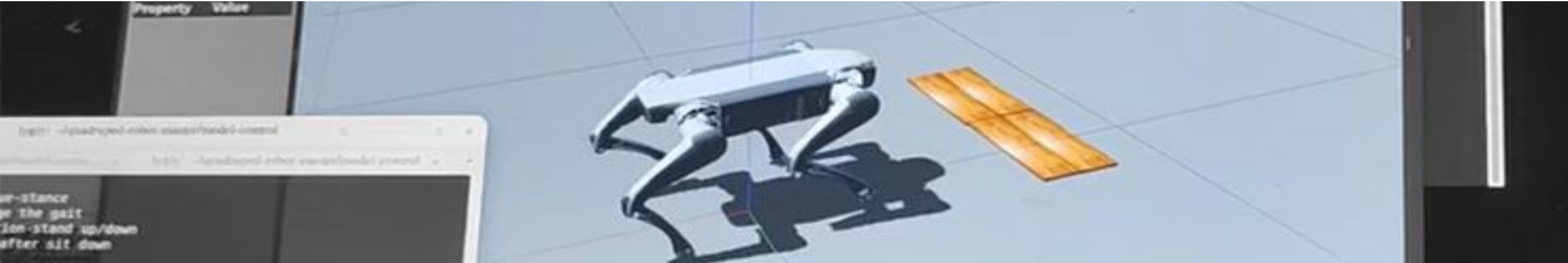
AI Server

21 TOPS:

- GPU: Equipped with 384-core NVIDIA Volta™
- GPU with 48 Tensor Cores.
- CPU: 6-core NVIDIA Carmel ARM@v8.2 64-bit
- CPU with 6MB L2 + 4MB L3 cache.
- Memory: 16GB, 128-bit LPDDR4x with a bandwidth of 59.7GB/s.
- Storage: 16GB eMMC 5.1.



System Architecture



Sensor Systems

Ultrasonic radar, LiDAR, and cameras provide comprehensive environmental data.

Processing Units

Dedicated perception units and motion controllers handle specialized tasks.

1

2

3

4

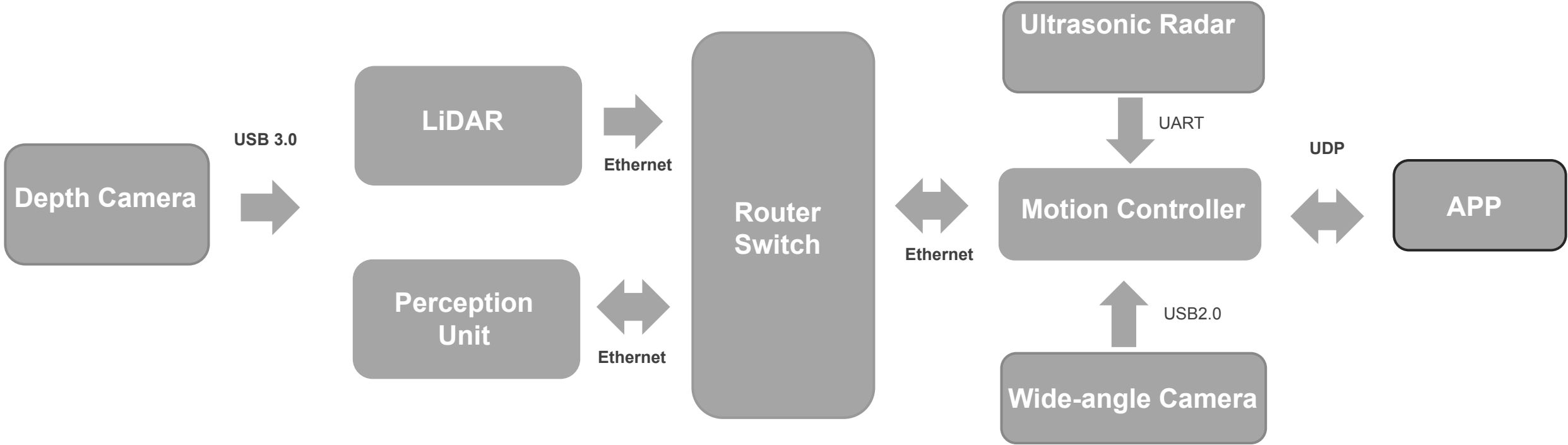
Communication Network

Ethernet, USB, and UART protocols ensure reliable data transmission.

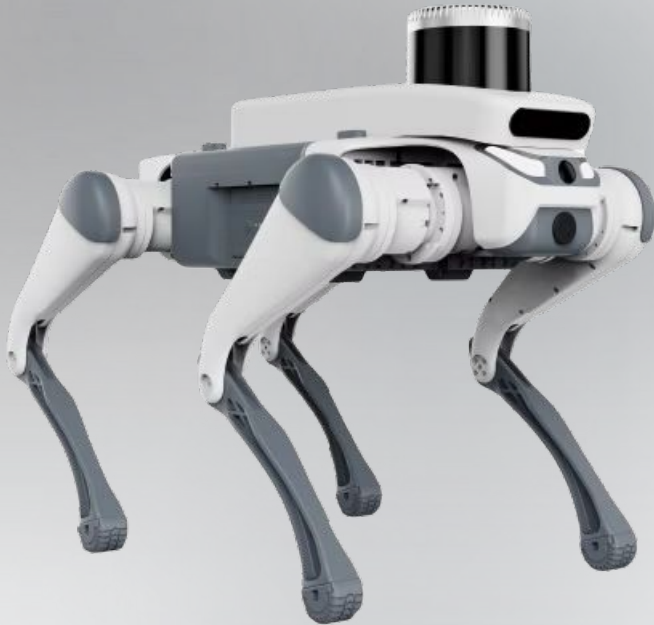
Control Interface

Intuitive app provides real-time control and monitoring capabilities.

Function Structure



Transform Your Robotics Education



4

Models

Different configurations to meet diverse educational needs.

21

TOPS

Powerful AI computing capabilities for advanced research.

16

Sensors

Comprehensive perception system for environmental awareness.

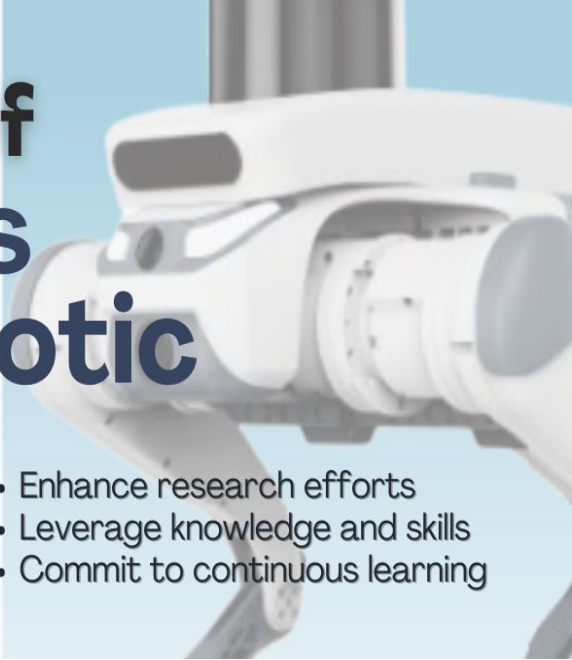
100%

Support

Complete documentation and development resources.



The Future of Learning is Robotic



- SID1 Basic
- SID1 Pro
- SID1 Venture AI

- Enhance research efforts
- Leverage knowledge and skills
- Commit to continuous learning



Education Bundle

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