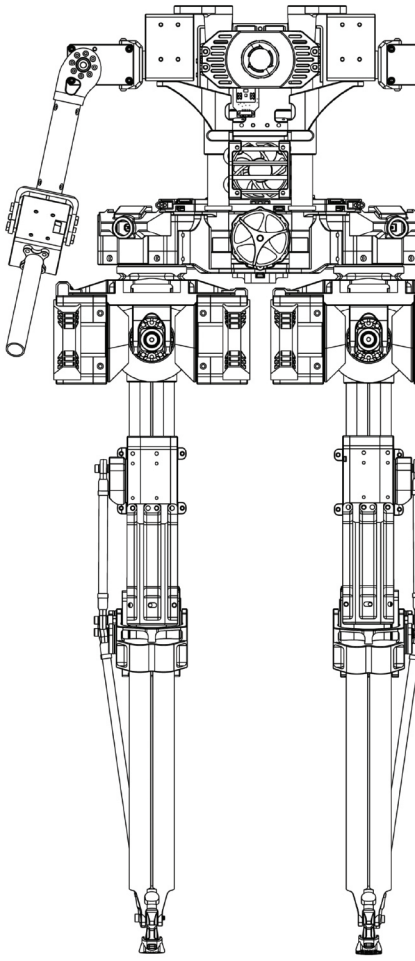
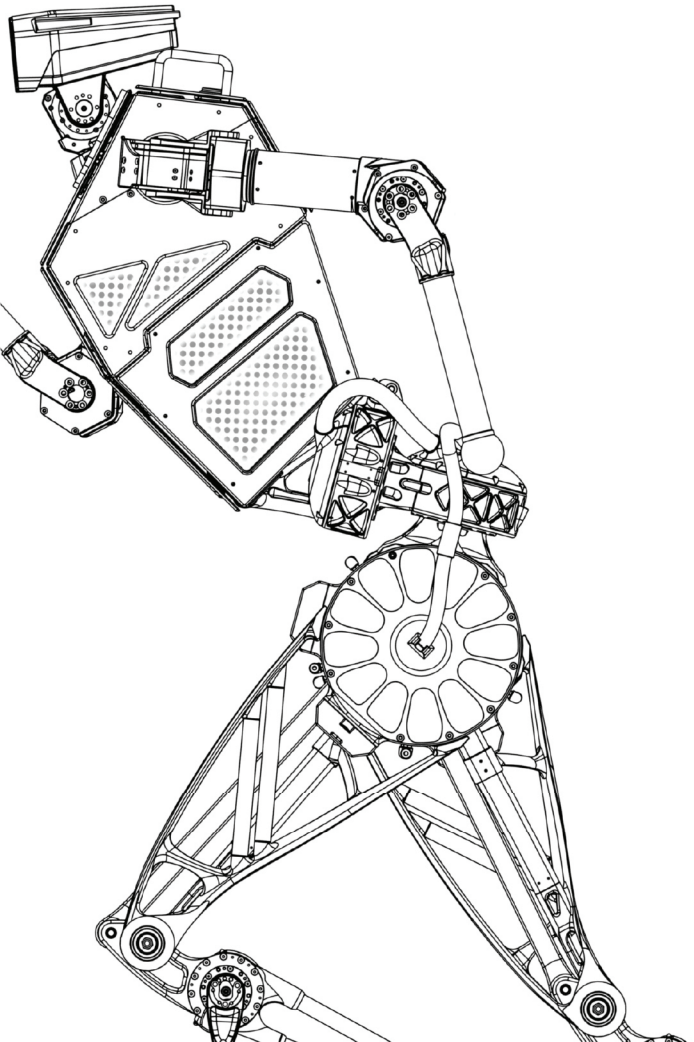
WESTWOOD ROBOTICS



HUMANOID



westwoodrobotics.io

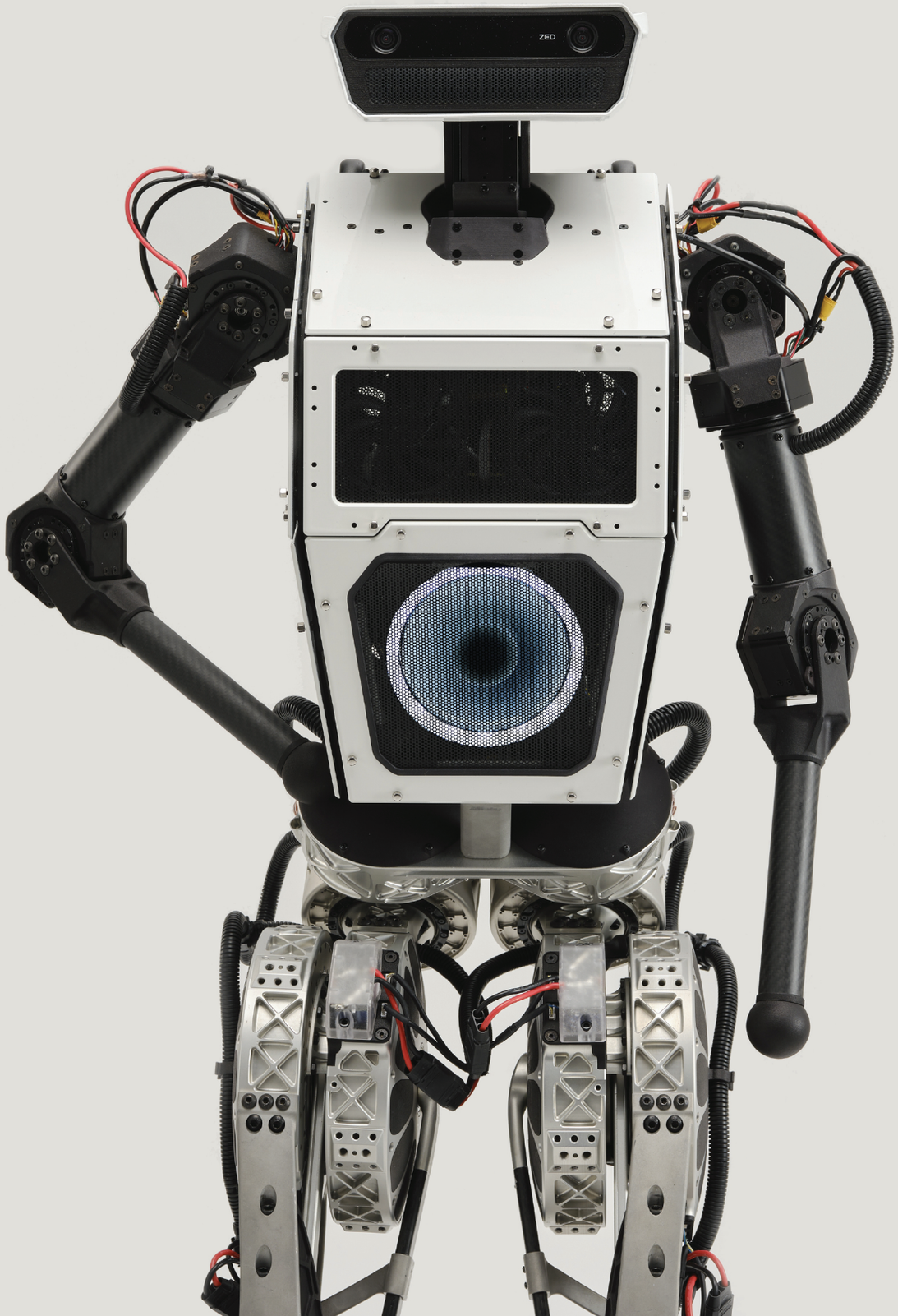
THEMIS

Full-size Dynamic General Purpose Humanoid Robot

Fast · Agile · Intelligent · Capable

westwoodrobotics.io/themis

WESTWOOD ROBOTICS



THEMIS **Avaliable Versions**

WESTWOOD ROBOTICS

Version	Basic	Advanced	Professional
Degree of Freedom	22 Total DoF 6DoF per leg, 4DoF per arm, 2DoF head		
Height	1.6m		
Weight	31kg	31.5kg	32kg
Payload Capacity*	15kg		
Max. Speed *	5km/h	10km/h	
Locomotion Modes	Walk	Walk Run Jump*	
Battery	2 x 288Wh 180A Max Discharge Rate with Safety Protections		
Max. Edurance*	120min		
Extra Battery	--	1	2
Main IMU	Tactical 6DoF	Tactical 9DoF	Tactical 9DoF+GPS
Foot Contact Sensor	--	3 per Foot	
Main Computer	CPU: Ryzen 7840 GPU: Radeon 780M 32GB + 512GB	CPU: AMD Ryzen 7840 GPU: AMD Radeon 780M DDR5 32GB + SSD 1TB	
Head Vision	Stereo: ZED 2	Stereo: ZED 2i	
Head Vision Computer	Orin Nano 8GB	Orin NX 8GB	Orin NX 16GB
Head IMU	6DoF		
Body Vison Front	--	Stereo: ZED X Mini	
Body Vision Back	--	--	Stereo: ZED X Mini
Body Vision Computer	--	Orin NX 8GB	Orin NX 16GB
Wireless E-Stop	Yes		
Liquid Cooling*	--	Single Pump	Dual Pump
On-site Training	2 Days	3 Days	
Free Tech Support	6 Months	12 Months	18 Months
THEMIS Advanture™ (Free Repair Service)	--	12 Months	18 Months
Wide-space Portable Crane	Included		
Lead Time	2 Months	1 Month	4 Months

* Payload Capacity is the maximum payload the robot can carry, approporate adjustments to the robot's dynamic model may be required to achieve stable performance.
* Max. Speed is the maximum free-load locomotion speed of the robot on non-slippery flat ground.
* Program for Jumping motion may be released in a future software update after the robot is shipped.
* Max. Edurance is tested at room temperature, with the robot fully charged, walking on flat non-slippery surface carrying no payload.
* Liquid Cooling (when applicapable) is applied to the Hip YAW, Hip ROLL, Hip PITCH and Knee PITCH actuators.

WESTWOOD ROBOTICS

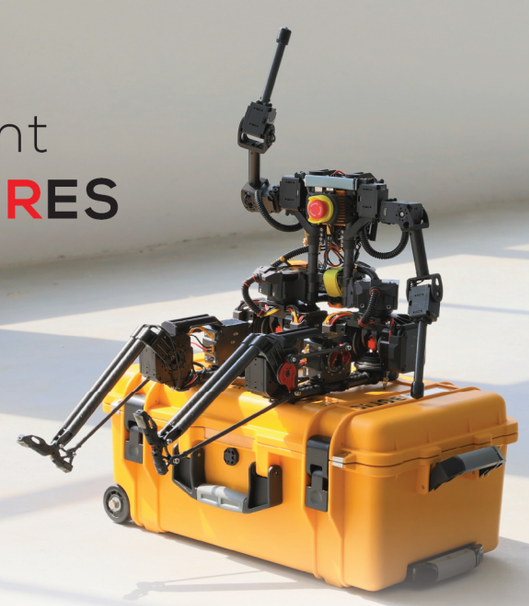
WESTWOOD ROBOTICS

BRUCE

A kid-size humanoid robot open-platform for research and education.

Bipedal Robot Unit with Compliance Enhanced

BRUCE (Bipedal Robot Unit with Compliance Enhanced) is a kid-size humanoid robot open-platform for robotics research and education, originally developed at RoMeLa in joint effort with Westwood Robotics.



Highlight FEATURES

Open-Source, Open-Platform

As an open-platform*, We hope that BRUCE can contribute to the advancement of worldwide robotics research as well as better collaboration on a global scale.

High-Performance Actuation

Thanks to the powerful Koala BEAR proprioceptive actuators and its unique liquid cooling technology, BRUCE is one of the few humanoid robots in the world that can jump.

Topology Optimized Biomimetic Design

Biomimetic design with deep topological optimization gives BRUCE an athlete-like physique. With lightweight construction and low inertia, great system transparency and agile foot control is achieved.

Light-Weight Carbon Fiber Structure

BRUCE features a carbon fiber composite structure, weighing only 4.8kg and offering an impressive 20 minutes** of continuous operation with a 3000mAh battery.

Modularity and Robustness

All 16 DoF on BRUCE are highly modular. While robot falling is inevitable, repairing BRUCE is simple and convenient. BRUCE is always ready to embrace your wildest ideas.

* BRUCE open-source project adopts the GNU General Public License V3. Westwood Robotics reserves the right to simplify certain features in the open-source design files.
** Actual battery life varies depending on factors like gait, terrain, payload, calibration, and temperature.

WESTWOOD ROBOTICS

Key Features of

BRUCE Humanoid Open-Platform

01 +
5DoF each leg
3DoF each arm
16DoF in total

02 +
Weighs only 4.8kg
Total height 70cm
3000mAh battery

03 +
Wireless E-Stop
with independent
remote

04 +
Controled over
SSH via WLAN
or remote via BT

05 +
Leg actuators
weigh only 250g
burst over 8Nm

06 +
Liquid-cooled
knee actuators

07 +
4 contact sensors
6DoF IMU
streaming at 2kHz

08 +
6TOPS 8+32GB
Supports mainstream
ML frameworks

09 +
Capable of
dynamic walking
running & jumping

10 +
Variable-cycle
MPC algorithm

11 +
Open-source
software and model

12 +
Actively evolving
Github Repo
and Wikipedia

westwoodrobotics.io/bruce

WESTWOOD ROBOTICS

Bringing **Robots** Closer To **People**

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Contact us: info@westwoodrobotics.io