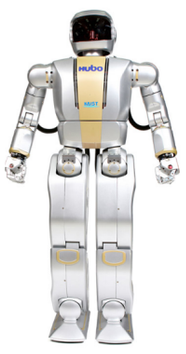
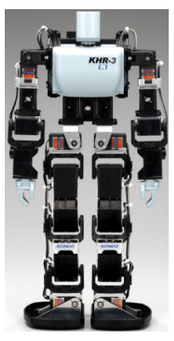
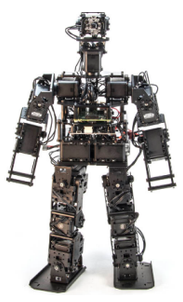
Tabela Comparativa de Robôs Antropormóficos

Name	Robot	DOFs	Height	Weight	Speed	Actuators	Power	Sensors	Computing	Software	Developer
LOLA		26 (Head: 2 DoF; Arm: 4 DoF x 2; Pelvis: 2 DoF; Leg: 7 DoF x 2)	176cm	68 kg	3.38 km/h (biped); 1.8 km/h (uneven terrain with or without additional hand contacts)	Custom design with brushless DC motors and harmonic drive gears. Parallel kinematics in legs. Up to 380 Nm torque (knee joint with roller screw mechanism)	24-V and 80-V circuit (external supply)	Torso with iMAR iVRU-FC-C167 IMU. Feet with custom force-torque sensor. Hands with Schunk FTE-Axia80 force-torque sensor. Head with Intel RealSense T265 and D435 cameras. Joints with incremental (motor side) and absolute (link side) encoders.	Two mini-ITX industrial boards each with Intel Core i7-8700 (6x3.2 GHz) CPU and 32 GB DDR4 RAM; Nvidia Quadro P2000 GPU; ELMO servo controllers for each joint; EtherCAT communication bus	QNX Neutrino RTOS 7.0 for control; Ubuntu 20.04 for computer vision; broccoli	DFG (German Research Foundation)
ASIMO		57 (Head: 3 DoF; Arm: 7 DoF x 2; Hand: 13 DoF x 2; Hip: 2 DoF; Leg: 6 DoF x 2)	130 cm	48 kg	9 km/h (running); 2.7 km/h (walking)	More than 26 DC motors and brushless DC motors	51.8-V lithium-ion battery, 1 hour of operation	Head with cameras and microphones. Torso with gyroscope and accelerometer. Foot with six-axis force sensor. Hands with tactile sensors in the palms and force sensor on each finger	Custom computing and control system	VxWorks real-time OS and custom control software	Honda
HUBO 2		40 (Neck: 3 DoF; Arm: 7 DoF x 2; Hand: 5 DoF x 2; Torso: 1 DoF; Leg: 6 DoF x 2)	125 cm	45 kg	1.5 km/h (walking); 3.6 km/h (running)	44 brushless DC motors (19 200-W 48-V motors, six 100-W 48-V motors, nine 11-W 48-V motors, and 10 0.75-W 12-V motors)	48-V lithium-polymer battery	Camera, three-axis force-torque sensor, two-axis inertial sensor, two-axis tilt sensor	Two PC/104 embedded computers with solid state drives	Windows XP OS with RTX (Real-Time Extension) for Windows	KAIST (Korea Advanced INstitute of Science and Technology)
ATLAS		28	150 cm	80 kg	5.4 km/h	Hydraulic actuation with custom servo-valves	Battery powered	Lidar and stereo vision	Custom control and computing system	Custom software	Boston Dynamics
DARWION-OP		20 (Leg: 6 DoF x 2; Arm: 3 DoF x 2; Neck: 2 DoF)	45.5 cm	2.9 kg	0.86 km/h	Dynamixel MX-28T actuators (DC servos with contactless absolute encoders)	11.1-V 1000-mAh lithium-polymer battery, 30 minutes of operation. Or external power supply	HD camera, three-axis gyroscope, three-axis accelerometer, stereo microphone. Force sensors optional	Intel Atom 1.6 GHz CPU (main computer), ARM Cortex M3 72 MHz CPU (subsystem), wireless network	Ubuntu Linux OS, Darwin-OP software framework (open source, written in C++)	Robotis
NAO		25 (Head: 2 DoF; Arm: 5 DoF x 2; Pelvis: 1 DoF; Leg: 5 DoF x 2; Hand: 1 DoF x 2)	58 cm	5.5 kg	0.3 km/h	25 Portescap brush coreless DC motors	27.6-Wh lithium-ion battery, 90 minutes of operation	Two 5-megapixel OmniVision cameras, inertial unit with three-axis accelerometer and two gyros, sonar rangefinder, four omnidirectional microphones, two infrared sensors, nine tactile sensors, and eight pressure sensors	Intel Atom 1.91 GHz quad-core CPU, 4 GB RAM, 32 GB SSD, Bluetooth, Wi-Fi, and Ethernet	Linux OS and Choregraphe suite for programming and visualization	SoftBank Robotics (originally created by Aldebaran Robotics, acquired by SoftBank in 2015)
KHR-3		22 (max)	40.1 cm	1.5 kg	N/A km/h	Up to 35 serial servos	10.8-V 800-mAh nickel-metal hydride battery	Gyros, accelerometer, and other optional sensors.	Microcontroller board RCB-4 with 10 A/D and 10 PIO extension ports. USB connection with PC and remote/Bluetooth controller	Heart to Heart software	Kondo Kagaku
SURENA Mini		23	53 cm	3.6 kg	-	-	-	-	-	-	University of Tehran
HR-OS1		-	-	-	-	DYNAMIXEL AX-12A	3-cell 11.1v 2200 mAH LiPo Battery	USB Webcam; IMU (Gyroscope, Accelerometer)	Raspberry Pi 2; Arbotix-Pro Robocontroller (Subcontroller)	Linux open source C++ framework	-
OP3		20	510mm	3.5kg (without skin cover)	-	DYNAMIXEL XM-430	Lipo 3cell 11.1v 1800mA	Camera Logitech C920 (1920x1080);IMU Sensor (Gyroscope, Accelerometer, Magnetometer)	Intel i3 based NUC; 8GB DDR4; M.2 SSD module (128GB); OpenCR (Subcontroller)	OS : Linux (64-bit) C++, ROS, DYNAMIXEL SDK	ROBOTIS
ROFI		12	-	-	-	Servo motors	2 LIPO batteries - 7.4v output	Ultrasonic sensors; accelerometer	Arduino Mega, Android tablet	-	-