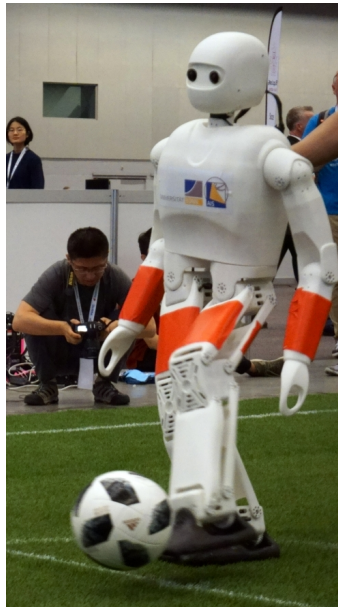


# NimbRo AdultSize Robot Data Sheet

Hafez Farazi, Grzegorz Ficht, Diego Rodriguez, Dmytro Pavlichenko,  
Mojtaba Hosseini, Oleg Kosenko, Marcell Missura and Sven Behnke

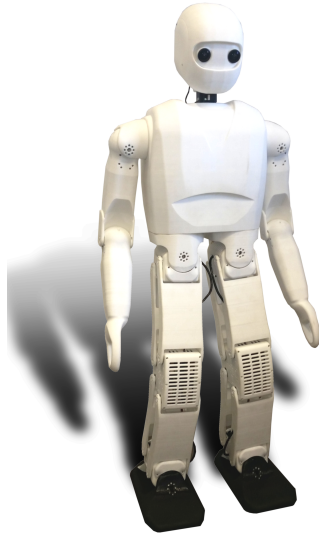
Rheinische Friedrich-Wilhelms-Universität Bonn  
Computer Science Institute VI, Autonomous Intelligent Systems  
Endenicher Alle 19A, 53115 Bonn, Germany

{ farazi | ficht | rodriguez | behnke } @ ais.uni-bonn.de  
<http://www.nimbro.net>



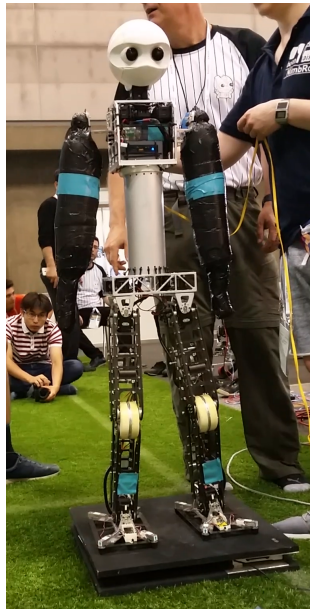
**Fig. 1.** The NimbRo-OP2X robot.

- **Robot name:** NimbRo-OP2X
- **Degrees of freedom:** 18 DOF (5 per leg, 3 per arm, 2 in the neck)
- **Type of motors:** Robotis Dynamixel XM-540
- **Processor:** Intel Core i7-8700T and Nvidia GTX 1050 Ti
- **Walking speed:** Omnidirectional walking, up to 0.5 m/s
- **Cameras:** Logitech C905 USB camera with a custom wide-angle lens
- **Sensors:** 3-axis accelerometer (LIS331DLH chip) and 3-axis gyroscope (L3G4200D chip)
- **Other specs:** Height 134.5 cm, weight 19.0 kg



**Fig. 2.** The Nimbro-OP2 robot.

- **Robot name:** Nimbro-OP2
- **Degrees of freedom:** 18 DOF (5 per leg, 3 per arm, 2 in the neck)
- **Type of motors:** Robotis Dynamixel MX-106R
- **Processor:** Intel Core i7-7700HQ and NVIDIA GeForce GTX 1060
- **Walking speed:** Omnidirectional walking, up to 0.5 m/s
- **Cameras:** Logitech C905 USB camera with a custom wide-angle lens
- **Sensors:** 3-axis accelerometer (LIS331DLH chip) and 3-axis gyroscope (L3G4200D chip)
- **Other specs:** Height 134.5 cm, weight 18.0 kg



**Fig. 3.** The Nimbro robot Copedo.

- **Robot name:** Copedo
- **Degrees of freedom:** 14 DOF (5 per leg, 1 per arm, 2 in the neck)
- **Type of motors:** Robotis Dynamixel EX-106+ and RX-64
- **Processor:** Intel Core i7-7567U
- **Walking speed:** Omnidirectional walking, up to 20cm/s
- **Cameras:** Logitech C905 USB camera with a custom wide-angle lens
- **Sensors:** 3-axis accelerometer (LIS331DLH chip) and 3-axis gyroscope (L3G4200D chip). Force sensors in feet.
- **Other specs:** Height 131 cm, weight 10.1 kg