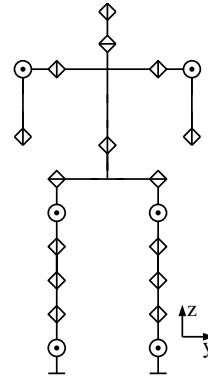
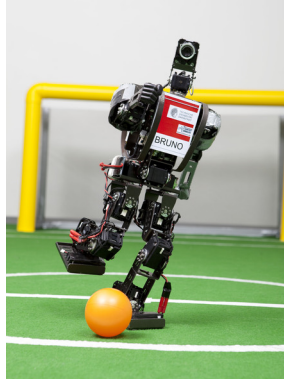


Darmstadt Dribblers KidSize Robot 2011



Autonomous humanoid robot *Bruno* kicking a ball (left, ©K. Binner) and kinematic structure of the robot (right).

Height:	57.5 cm
Weight:	3.34 kg
Walking speed:	0.4 m/s (max)
Degrees of freedom:	21 in total with 6 in each leg, 3 in each arm, 1 in the waist, 2 in the neck
Servo motors:	18 Robotis RX-28 3 Robotis RX-64
Sensors:	Camera Philips SPC 1300 NC Resolution up to 1.3 MP Color space YCbCr Frame rate up to 90 fps Angle 80° Joint angle encoder 21 (integrated in servos) Gyroscope (body) Silicon-Sensing CRS03-04, 3 axes Accelerometer Analog Devices ADXL330, 3 axes
Control frequency:	100 Hz
Microcontroller board:	Manufacturer Hajime Research Institute Ltd. Processor 32bit μ C SH2/7211 Speed 160 MHz
Onboard PC:	Processor Intel Atom Z530 1.6 GHz RAM 1 GB DDR2 Operating system Linux LAN Gigabit Ethernet WLAN 802.11 a/b/g Mass storage 2 GB SATA Flashdisk
Batteries:	Li-poly 18.5 V, 2100 mAh

Technical data of the 2011 humanoid kid size robot of Darmstadt Dribblers.