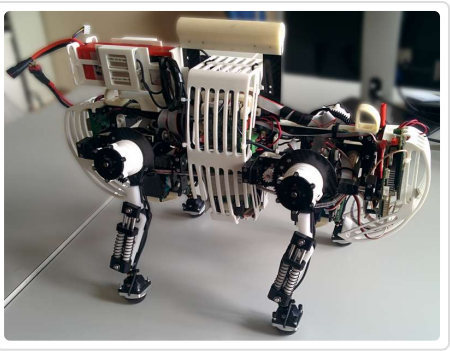

Oncilla

Oncilla is a compliant, quadruped robot developed during the FP7 European project AMARSi (Adaptive Modular Architectures for Rich Motor Skills, project start March 2010, project duration 48 months, 4 Oncilla copies build and distributed, 2 remain at BIOROB). The goal of the AMARSi project was to improve richness of robotic motor skills. Oncilla is a highly sensorized robot with panthographic legs (ASLP legs) as well as an abduction/adduction (AA) mechanism. The sensorization features encoders on each joint and motor, IMU as well as new ground contact sensors in the feet (3d force-sensors). The research done with the BIOROB team focuses around closed loop rough terrain locomotion and richer motor behaviors through a combination of CPG's and reflexes.

Key Features

- Load sensors, IMU
- On-board power supply
- Closed-loop control with joint position and inverse kinematics
- Different actuator architecture using Brushlessh DC motors and custom electronics
- Possibility of up to 500g payload

Possible Applications

- Exploring different neural networks inspired by animals
- Platform for sensor carrier, such as camera
- Animal gait exploration
- Researching different feet or legs designs
- Search and Rescue

Access information

Corresponding infrastructure	École Polytechnique Fédérale de Lausanne BioRobotics Lab
Location	Route Cantonale, 1015 Lausanne, Switzerland
Unit of access	Working day

Technical specifications

dhip-shoulder	0.223m
dshoulder-shoulder	0.138m
lhip, standing height	0.201m
Mactuators+electr, sum	2.845 kg
Mrobot	5.05 kg
Active degrees of freedom	12
Gait type	trot/ bound/ walk
Body lengths per second	2.7
Froude number FR (v^2/G/lhip)	0.18
Maximum speed, vmax	0.6 m/s
RC servo motor	Kondo KRS2350 ICS (4x), Maxon 90 BLDC (8x)
Control board	RoBoard RB110
Power supply, tethered	10V to 12V

Additional information

https://biorob.epfl.ch/op/edit/amarsi

Videos: https://go.epfl.ch/ExperimentsOncilla

3DPDF: https://go.epfl.ch/3DPDFOncilla