

The LIRA-Lab, Laboratory for Integrated Advanced Robotics, operates in the Department of Communication, Computer and Systems Science (DIST) of the University of Genova.

The main research theme is artificial vision and sensorimotor coordination from a computational neuroscience perspective. The goal is to understand how the brain of living systems transforms sensory input into motor and cognitive functions by implementing physical models of sensorimotor behaviors.

Research activity is carried out around a number of experimental setups allowing experimentation with humanoid robots as well as basic research on artificial vision and robot control.

LIRA-Lab is funded by National and International agencies and industries within Collaborative research project.

More information at:

<http://www.liralab.it>

LIRA-Lab
Laboratory for Integrated Advanced Robotics
DIST—University of Genoa

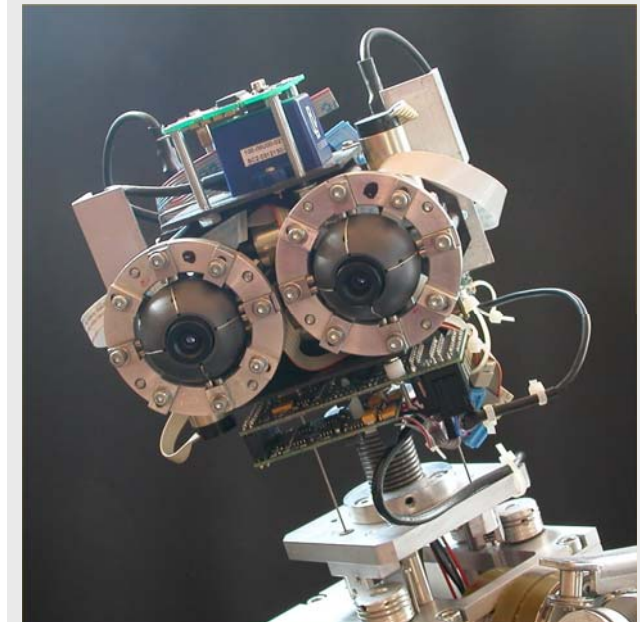
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ADAPT

*Artificial Development Approach to Presence Technologies
IST 2001-37173*

The sense of presence arises from the perception of the relationship between our body and the environment and originates from our senses as well as from our past experience. The main objective of ADAPT is to study how the perception of the self in the environment emerges during the early stages of human development and to implement an artificial instance of such a developmental process in an embodied artifact. We investigate the process of building a coherent representation of visual, auditory, and haptic sensations.

For more information:

<http://www.liralab.it/adapt>



Adapt is funded within the FET Proactive Initiative 2002 PRESENCE RESEARCH ACTIVITIES

Together with:

AI-Lab, Dept. of Information Technology
University of Zurich, Switzerland

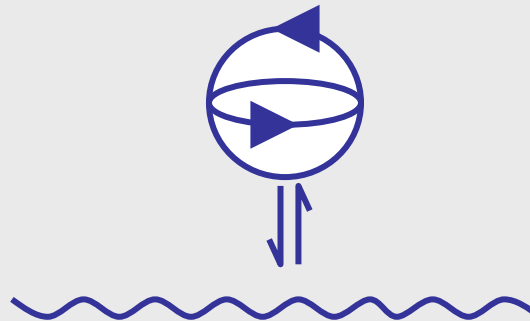
UMR7593, CNRS, University Pierre & Marie Curie, Paris, France



RobotCub

*A project on humanoid technology and cognitive neurosciences
FP6-IST-004370*

RobotCub is a 5 year-long project funded by the European Commission through Unit E5 "Cognition". RobotCub has the twin goals of (1) creating an open and freely-available humanoid platform — the iCub — for research in embodied cognition, and (2) advancing our understanding of cognitive systems by exploiting this platform in the study of cognitive development.



The iCub will have a physical size and form similar to that of a two year-old child and will achieve its cognitive capabilities through ontogenetic co-development with its environment: by interactive exploration, manipulation, and imitation. iCub will be designed as a freely-available open system which can be shared by scientists as a common tool for research in cognitive systems.

<http://www.robotcub.org>

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MIRROR

*Mirror Neurons based Robot Recognition
IST-2000-28159*

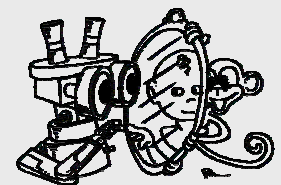
MIRROR is about the study of sensorimotor development in humans and in particular how visual and motor representations are learned and used to control complex motor acts such as grasping. We explore this by designing and performing behavioral experiments on infants at different ages.

MIRROR is also about implementing artifacts shaped as humanoid robots which learn to perform and recognize actions.

Lastly, MIRROR is about the idea of studying the representation of grasping within the framework of the so called "mirror neurons".

For more information:

<http://www.liralab.it/mirror>



Together with:

Department of Biomedical Sciences, University of Ferrara, Italy

Vision-Lab Instituto Superior Técnico, Lisbon, Portugal

Department of Psychology, University of Uppsala, Sweden