



www.RoboTechsrl.com

an academic spin-off company of the Scuola Superiore Sant'Anna

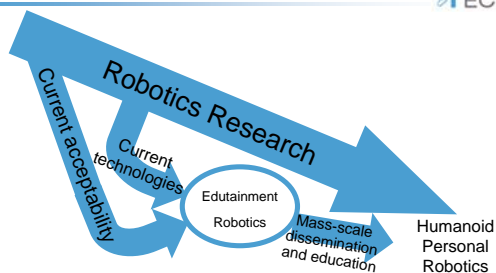
Mission of RoboTech srl:



entertainment and educational robotics, or

Edutainment Robotics

Edutainment Robotics and Robotics Research

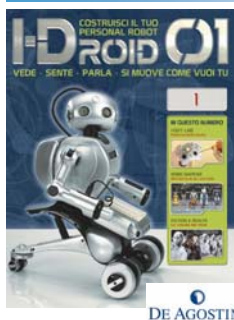


Edutainment Robotics



- Bring robots closer to people
- Help people understand robotics and trust robots
- Currently most acceptable
- Can favour the creation of the cultural background for the spreading of personal robots

I-Droid01 Robot



RoboTech srl has designed and developed I-Droid01, an edutainment robot, distributed internationally as a collection by De Agostini Editore (Italian publisher, with branches in 30 countries worldwide).

I-Droid01 Robot



- Visual and auditory sensory systems
- Image processing and visual recognition
- Speech recognition and synthesis
- Detection of sound direction
- Voice control
- Obstacle avoidance (US sensors)
- Emotion and mood expression
- Neural Network based control system
- Remote control by mobile phone and PC via Bluetooth
- Programmable

Beginners Robot Programming



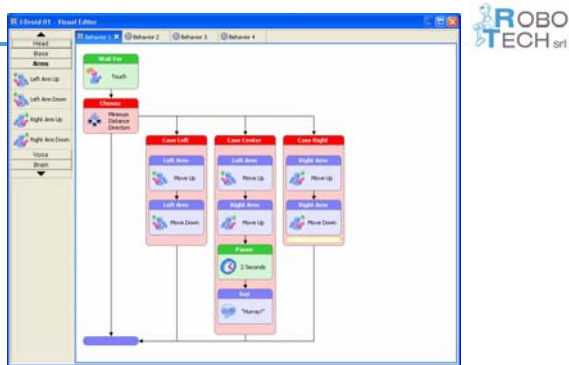
- The Beginners Robot Programming modality is addressed to users with poor or no ability in robot programming. In this modality the user can **change only some parameters** that define the robot behaviour.
- By means of a **user graphical interface** the user can change robot parameters, which are transmitted to the robot system controller.

Intermediate Robot Programming



- The Intermediate Robot Programming modality is addressed to users with no ability in software programming but that wish to program the robot anyway. In this modality the user can **define new behaviours** for the robot by means of a simple **graphical user interface** on a PC. The new behaviours will be compiled in a transparent way for the user on the PC and downloaded directly on the robot system controller for execution.
- New behaviour could be easily created **by associating actions to the occurrence of particular events related to sensors status**.

Intermediate Robot Programming GUI



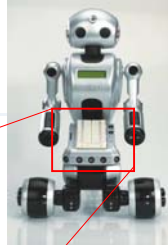
Advanced Robot Programming



- The Advanced Robot Programming modality is addressed to users with ability in software programming or that wish to learn robot programming. In the Advanced Robot Programming modality the user can define **new behaviours for the robot by creating new programs with a programming language**. This modality comprises two type of robot programming:
 - **type 1 (ARP-T1)**: new programs are developed on a PC by means of a "C-like" **programming language** and they are downloaded and compiled for execution on the **robot system controller**. In this case the new programs are **executed on the robot system controller**; The "C-like" programming languages includes the main C's expressions and statements constructs as well as statements for the control of the motors and for retrieving the status of the sensors of the robot.
 - **type 2 (ARP-T2)**: new programs are developed on a standard PC in **Java**. In this case new programs are **executed on a remote PC**, which communicates with the robot via Bluetooth. A Java library allowing remote control of the robot for both Linux and Windows OS is provided. New programs are compiled and linked with the robot library, which provide access to robot functionalities such as motor commands and sensor status, on the remote PC.

I-Droid01 expandability

The user can integrate additional sensors and/or actuators he/she chooses or even develops purposively



BREADBOARD FOR 8 ADDITIONAL GPIO (GENERAL PURPOSE IO)

ADDITIONAL INPUTS AND OUTPUTS:
 3 Digital Inputs 0,3V
 3 Digital Outputs 0,3V
 2 Analog Inputs 0-3V

I-Droid01 commercial format

Parts sold weekly with booklet



Booklets with instructions and educational texts on robotics



RoboTech Existing Partnerships

RoboTech Srl is the european distributor of RoboDesigner, an educational Robotic Kit of Japan Robotech
 (<http://www.japan-robotech.com>)

The image shows the RoboDesigner kit in its packaging, which includes a red circular component and various electronic parts. The logos for ROBO DESIGNER and JAPAN ROBOTECH LTD. are displayed to the right.

RoboDesigner

The image shows the RoboDesigner kit and a student project. The student project is a small robot on a white surface, with the text "Students' projects at IMT Lucca, PhD School in Biorobotics Science and Engineering" below it. The website address www.RobotechSrl.com is also visible.

RoboTech Existing Partnerships

RoboTech Srl is the only european design house of Sensory Inc.
 (www.sensoryinc.com), world leader in embedded speech technologies

The image shows the Sensory logo, which consists of a stylized blue swirl followed by the word "SENSORY" in a bold, sans-serif font.

Next steps of RoboTech srl

- Distribution of I-Droid01 in 6 countries, in total
- Development of further products for a wide market, worldwide

RoboTech people

- Co-founders:
 - Nicola Canelli, Research Assistant at the ARTS Lab from 2000 to 2005
 - Cecilia Laschi, Assistant Professor, at the ARTS Lab since 1992
- Full-time employees:
 - Giancarlo Teti, PhD, Research Assistant at the ARTS Lab from 1995 to 2005
 - Paolo Messina, software engineer
 - Patrizio Sorace, electronics engineer
- + 3 part-time collaborators, with research experience at the ARTS Lab

Conclusions on the RoboTech srl case-study



- People with medium-long research education at the ARTS Lab of the Scuola Superiore Sant'Anna
- Starting from the long-term research vision of Personal Robotics, exploits current robotics technologies for developing edutainment robots acceptable today
- Educational mission to pave the way to a more massive introduction of robotics in the Society

Contacts



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