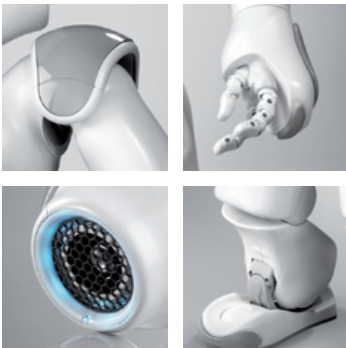


# NAO

A trusted  
open platform  
ready for your  
research.



FULLY PROGRAMMABLE  
MULTIPLE SENSORS  
ONBOARD COMPUTER  
REMOTE CONTROL  
FRIENDLY DESIGN AND  
LIGHTWEIGHT



**NAO is a research platform used  
by more than 300 prestigious universities  
around the world.**

Why is NAO so popular? Probably because NAO is a versatile tool which can be used to explore a great variety of research topics. NAO is state-of-the-art robotic technology and works straight out of the box, which enables scientists to focus on their core research. NAO is also provided with a multi-platform and multi-level programming environment with complete documentation. NAO's great design makes any demonstrations more engaging and easy to access.

In addition Aldebaran Robotics is building a worldwide community of NAO users. It provides tools to encourage users to share their work, research and practical lessons.

## Programming NAO

NAO contains an open framework called NAOqi. Depending on the user's expertise NAO can be programmed in different ways. Beginners can use Choregraphe, our user-friendly behavior editor. They can create sequences of pre-programmed behaviors or code their own behaviors in Python language.

Advanced users can program NAO in C++ & .Net languages and directly access NAOqi APIs thanks to our Software Development Kit. The APIs are well documented and give the user low level access to NAO's sensors and actuators. A program called Monitor designed to collect the data from the sensors, and NAOsim, a 3D simulator to quickly test and debug NAO's behavior and applications, are also available.

## OPTION: HEAD WITH HOKUYO LASER SCANNER



- **Detection range:** 0.02 to approximately 4m
- **Scan angle:** 240°
- **Scan time:** 100msec/scan (10.0Hz)
- **Resolution:** 1mm
- **Interface:** USB 2.0, RS232

**Great tool for localization,  
mapping, planning.**

## MOVE

NAO has 25 Degrees of Freedom.

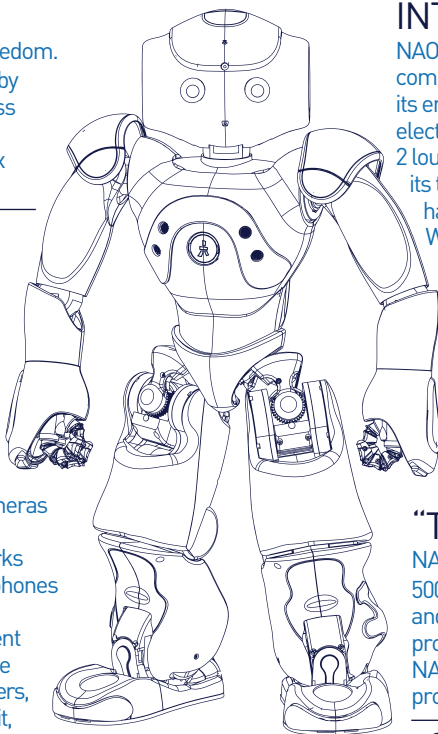
The joints are all animated by smooth and precise coreless motors and controlled with software. NAO has complex movement capabilities.

- **25 Degrees of Freedom**
- Smooth and precise **coreless motors**
- Controlled with software

## SENSE

NAO has a whole range of sensors to extract information from its environment. With its 2 cameras NAO can track, learn and recognize images, landmarks and faces. With its 4 microphones NAO can track sounds and recognize words in 6 different languages. NAO has 8 Force Sensing Resistors, 2 Bumpers, an Inertial Measurement Unit, 2 sonars and Infrared sensors.

- **2 cameras**
- **4 microphones**
- **8 FSRs, 2 Bumpers**
- **DCM**
- **2 Sonars**



NAO<sup>H25</sup>

## INTERACT

NAO can interact and communicate with people, with its environment, and with other electronic devices thanks to its 2 loudspeakers, its multiple LEDs, its tactile sensors, its prehensile hands, its Infrared sensors and WIFI connection.

- **2 loudspeakers**
- **Multiple LEDs**
- **Tactile** sensors (head and hands), **prehensile** hands
- **Infrared** sensors
- **WIFI** connexion

## "THINK"

NAO is equipped with a GEODE 500Mhz CPU, 256 MB SDRAM and 2 GB Flash Memory to process data. In addition, NAO is provided with a whole programming environment.

- **Geode 500Mhz CPU**
- **256 MB SDRAM**
- **2 GB Flash Memory**
- **Software Suite + SDK** to program NAO

## A FULL RANGE OF PRODUCTS



NAO<sup>T2</sup>



NAO<sup>T14</sup>

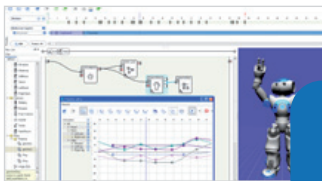


NAO<sup>H21</sup>

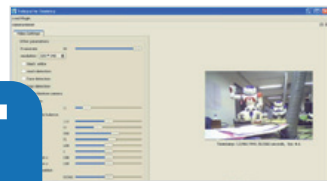


NAO<sup>H25</sup>

## A WHOLE PROGRAMMING ENVIRONMENT



CHOREGRAPHE



TELEPATHE



NAOsim



NAOqi / SDK

## A DYNAMIC COMMUNITY OF USERS



NAOshare



FORUM / TESTIMONIALS



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More information at [www.aldebaran-robotics.com](http://www.aldebaran-robotics.com)

## SENSING

AUDIO  
MULTIMODAL FUSION  
PERCEPTION  
VISION  
TRACKING

## THINKING

ARTIFICIAL INTELLIGENCE  
COOPERATION (SWARM...)  
COGNITION  
LEARNING

## INTERACTING

PSYCHOLOGY  
HUMAN-ROBOT INTERACTION  
ETHNOLOGY & SOCIOLOGY  
HEALTHCARE

## CONTROLLING

MANIPULATION & GRASPING  
WHOLE BODY MOTION  
CONTROL

## MOVING

NAVIGATION  
LOCALIZATION  
MAPPING  
PLANNING

## BEING AUTONOMOUS

AUTONOMY  
EMBEDDED SOFTWARE



Discover exclusive testimonials on our YouTube Channel:  
<http://www.youtube.com/user/AldebaranRobotics>

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