

法國製造人工智能機器人 簡介

Aldebaran Robotics 亞德巴郎機器人公司

NAO Robot : Hardware Platform NAO 機器人硬件配備

NAO is a programmable, 58cm tall humanoid robot with the following key components: 身高 58 厘米、可編程式的仿人化的機器人

- Body with 25 degrees of freedom (DOF) whose key elements are electric motors and actuators 肢體具 25 度的自由度(DOF) , 主要由電動摩打及推動器操作
- Sensor network, including 2 cameras, 4 microphones, sonar rangefinder, 2 IR emitters and receivers, 1 inertial board, 9 tactile sensors, and 8 pressure sensors 感應器系統包括 2 個攝影機、4 個收音器、聲納測距儀、2 個紅外線發射及接收機、1 個慣性版模、9 個觸覺感知器、及 8 個壓力感知器。
- Various communication devices, including voice synthesizer, LED lights, and 2 high-fidelity speakers 多種通訊器材包括聲音分析儀、發光二極體照明 LED 燈、二路高傳真度發聲器。
- Intel ATOM 1,6GHz CPU (located in the head) that runs a Linux kernel and supports Aldebaran's proprietary middleware (NAOqi) 機器人頭部內置 Intel ATOM 1,6 GHz 中央處理器，供運作 Linux 系統和支援亞德巴郎專利的中界硬件。
- Second CPU (located in the torso) 身體軀幹配置第二枚中央處理器
- 27,6-watt-hour battery that provides `11NAO with 1.5 or more hours of autonomy, depending on usage 27.6 伏特/時 電池為 NAO 機器人提供約 1.5 小時的動力，續航力需視實際操作模式而定。

Sources 資料來源:

<http://www.aldebaran-robotics.com/en/Discover-NAO/Key-Features/hardware-platform.html>

NAO Robot : Software – Choregraphe

NAO 機器人 Choregraphe 軟件

Entirely designed and developed by Aldebaran Robotics, Choregraphe is the programming software that lets NAO users create and edit movements and interactive behaviors simply. **Choregraphe** 軟件由亞德巴郎機器人公司自行研發，簡化設計、編程和修改機器人的動作。

The intuitive graphic interface, standard behavior library, and advanced programming functions meet the needs of novices and experts. 直覺的圖形介面、標準行為數據庫、及高級編程功能，可滿足專家及新手的需要

Anyone can compose behaviors by simply dragging/copying from the library or creating personalized boxes and saving them to personal libraries. 不同程度使用者均可以從數據庫複製和編輯行為動作，或自行編制適合個人化的行為動作。

You can explore event-based, sequential, or parallel programming; the timeline lets users program with schedule logic. 使用者可自行製作適合個人需要的活動、序列或平行式編程，其**時序模式**可供使用者運用邏輯編程功能。

The preprogrammed behavior boxes are easily configurable, but you can also create your own using the Curve Editor to edit movements or by writing them in Python script. 預置程式可供簡易修訂，使用者亦可自行運用 **Curve Editor** 修改行為動作，或用 **Python** 程式語言編寫行為動作。

Combining these approaches creates vast opportunities in NAO programming, with or without entering the complexity of code. 透過不同的編程工具，使用者無需編寫冗長程式編碼，輕易地自由創作不同 **NAO** 程式。

Choregraphe understands the Urbi and Python languages, so it can directly call separately developed C++ modules. **Choregraphe** 兼容 **Urbi** 及 **Python** 程式語言，可以直接編寫 **C++** 程式編程。

It comes with many detailed examples to simplify the learning process. 機器人內置多款編程，令使用者容易熟習相關操作。

Choregraphe is multiplatform and readily integrates into your development environment; it is compatible with Windows, Mac OS, and Linux. **Choregraphe** 可以在 **Windows, Mac OS** 及 **Linux** 操作系統下編程和運作。

Sources 資料來源:

<http://www.aldebaran-robotics.com/en/Discover-NAO/Software/choregraphe.html>

The ASK NAO initiative ASK NAO 機器人新意念

The best of humanity and technology paired together to breakdown communication barriers 從人性和技術的完美組合，以解決溝通障礙

ASK NAO (Autism Solution for Kids) was created by Aldebaran Robotics to customize NAO, our humanoid robot, in order to support teachers with in-class tasks, facilitate communication with parents, and therefore help children with autism reach new levels of greatness. **ASK NAO (自閉兒方案)** 乃由亞德巴郎機器人公司根據具人性化 NAO 機器人而製造，目的是支援老師的班房學習項目，促進兒童與家長的溝通，最終協助自閉兒獲得最大的程度的成長。

This initiative was developed after noticing that many children with Autism seem impulsively attracted to technology therefore allowing NAO to become the perfect bridge between technology and our human social world. *此新意念源於自閉兒接觸 NAO 機器人後具有積極性反應，從而引發運用 NAO 機器人連接自閉兒和外間世界。*



ASK NAO clears the path for a revolution in thinking, driven by those who are most intimate with Autism and technology. **ASK NAO 機器人** 為自閉症和工業技術業界人士，打造創新意念的路徑。

The ASK NAO offer benefits to special education schools, associations and healthcare institutions who wish to: **ASK NAO 機器人** 有助特殊教育學校、社福、和醫護團體達成下列目的：

- Bridge the gap with their students 克服學生的障礙
- Unlock child's greatness 釋放學生潛能

Aldebaran Robotics NAO 亞德巴郎機器人公司 資料 (English / 繁體字)

- Support teachers in their daily tasks 支援老師日常工作
- Revolutionize teaching in Special education 特殊教育的革命性創意
- To get promotion with the best technological services 利用科技優勢作宣傳

Altogether with NAO, we can shape the special education world of tomorrow for the best of the children. 我們透過 **NAO** 機器人技術，為兒童打造明日優質特殊教育

To accomplish this Aldebaran Robotics is creating a multi-sided community made up of developers, therapists, researchers, teachers, parents, enthusiasts, and the Aldebaran team collaborating to help children at surpassing their limits! 亞德巴郎機器人公司希望建立一個多元化社區，包括：程式開發員、治療師、研究員、老師、家長、熱心人士、和我們公司的團隊，聯手為兒童超越他們的成長局限。

Sources 資料來源:

<http://www.aldebaran-robotics.com/en/Solutions/For-Autism/The-Ask-NAO-initiative.html>

Chinese translation provided by Autism Hong Kong

中文由「香港自閉症聯盟」翻譯

August 2013