

# Trainings



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Our training sessions are adapted to your needs & skills. Sessions are based on hands-on exercises, applied examples, educational content.

Let us share with you our knowledge on NAO with you, your students and developers, we drive robotics towards a better world!

You will meet the NAO user community, as well as our expert teams and engineers, all of which will offer you special support. You will also get a glimpse of the fascinating world of robotics in our Atelier!



# 1. NAO Buddy – Level 1

## Details

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- 2 days in Paris
- in English

## Pre-requisites

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- You have a NAO robot
- You've purchased the training session Level 1
- You speak English
- You have basic programming skills
- Bring your own robot and your own laptop to the training

## Agenda

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### Day 1: Monday

TIME	TOPIC	CONTENT
10:00 – 10:30	INTRODUCTION	<ul style="list-style-type: none"> <li>○ Presentation of participants and projects</li> <li>○ Introduction &amp; installation to the software suite: Choregraphe, Monitor, Webots for NAO, APIs and NAOqi, Web page, documentation and Users website</li> </ul>
10:30 – 10:30	OVERVIEW OF THE HARDWARE	<ul style="list-style-type: none"> <li>○ Sensors and actuators</li> <li>○ Hardware architecture</li> </ul>
10:30 – 12:30	FIRST STEPS WITH NAO	<ul style="list-style-type: none"> <li>○ Connect NAO and use the web page</li> <li>○ How to update the robot and software</li> <li>○ Flow diagram, 3D view, stiffness and behavior manager</li> </ul>
12:30 – 14:00	LUNCH	
14:00 – 18:00	OVERVIEW OF THE SOFTWARE SUITE	<ul style="list-style-type: none"> <li>○ Overview of Choregraphe and Monitor</li> <li>○ Overview of Aldebaran box library (move, talk , hear, see) and create new boxes, inputs &amp; outputs               <ul style="list-style-type: none"> <li>- Create and edit a movement using the timeline with the record and motor curve features</li> <li>- Use NAO's capacities: vision processing, text-to-speech, voice recognition and inertial board</li> <li>- Create new boxes and add them to the library</li> </ul> </li> </ul>

## Day 2: Tuesday



TIME	TOPIC	CONTENT
10:00 – 10:30	PROGRAM WITH PYTHON AND CHOREGRAPHE	<ul style="list-style-type: none"><li>○ Python introduction with NAO</li><li>○ Structure of a Choregraphe box in Python</li><li>○ Hello world example and the API documentation</li><li>○ Use loops &amp; conditions inside script boxes</li><li>○ Understand logs for debug</li><li>○ Include files in Project Content</li><li>○ Create Python scripts outside Choregraphe using existing APIs</li><li>○ Understand Memory Reader</li></ul>
10:30 – 12:30	USE WEBOTS FOR NAO	
12:30 – 14:00	LUNCH	
14:00 – 18:00	CREATE YOUR INTERACTIVE PROGRAM WITH NAO	<ul style="list-style-type: none"><li>○ Use behaviour layers to create a complex behaviour (with loops, random events...)</li><li>○ Synchronize movements and boxes</li><li>○ Manage resources</li><li>○ Exercises</li><li>○ Package and finalise behaviours</li></ul>



## 2. NAO Master – Level 2

### Details

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- 3 days in Paris
- in English

### Pre-requisites

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- You have a NAO robot
- You've attended NAO Buddy Level 1
- You've purchased the training session Level 2
- You speak English
- You have good programming skills
- Bring your own robot and your own laptop to the training

### Agenda

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#### Day 1: Wednesday

TIME	TOPIC	CONTENT
10:00 – 10:30	NAO & SOFTWARE ARCHITECTURE	<ul style="list-style-type: none"><li>○ Presentation of participants and projects</li><li>○ Hardware</li><li>○ Software tools and architecture</li><li>○ Network tools: broker, proxy</li></ul>
10:30 – 12:30	PYTHON IN CHOREGRAPHE	<ul style="list-style-type: none"><li>○ Life cycle</li><li>○ Understand logs for debug</li><li>○ API usage</li><li>○ Import Python files in Choregraphe</li></ul>
12:30 – 13:30	LUNCH	
13:30 – 15:00	REMOTE CONTROL & MODULE CREATION	<ul style="list-style-type: none"><li>○ Remote control through a proxy</li><li>○ Create a remote module (Python)</li><li>○ Create a local module</li></ul>
15:00 – 16:30	AUDIO WITH PYTHON	<ul style="list-style-type: none"><li>○ Introduction to Audio module</li><li>○ Sound processing in Python</li><li>○ Speech processing in Python</li></ul>
16:30 – 18:00	VISION WITH PYTHON	<ul style="list-style-type: none"><li>○ Introduction to Vision module</li><li>○ Remote vision module in Python</li><li>○ Open CV</li></ul>



## Day 2: Thursday

TIME	TOPIC	CONTENT
10:00 – 10:30	DEVELOP WITH THE SDK	<ul style="list-style-type: none"> <li>○ Set-up the environment for C++</li> <li>○ qibuild description</li> </ul>
10:30 – 12:30	DEVELOP WITH THE SDK	<ul style="list-style-type: none"> <li>○ Create, run &amp; use a C++ module (remote and embedded)</li> <li>○ Use one module from Choregraphe</li> </ul>
12:30 – 14:00	LUNCH	
14:00 – 15:00	AUDIO WITH C++	<ul style="list-style-type: none"> <li>○ Sound processing in C++ (remote and embedded)</li> </ul>
15:00 – 17:00	VISION WITH C++	<ul style="list-style-type: none"> <li>○ Create a vision module in C++ (remote and embedded)</li> <li>○ Access to raw camera data</li> </ul>
17:00 – 17:30	CREATE PYTHON GUI FOR REMOTE MONITORING AND CONTROL	
17:30 – 18:30	PROGRAM WITH OTHER LANGUAGES	<p>Optional session, given a minimum number of request</p> <ul style="list-style-type: none"> <li>○ .NET Overview and installation</li> <li>○ Java</li> </ul>

## Day 3: Friday

TIME	TOPIC	CONTENT
10:00 – 12:30	MOTION (PYTHON & C++)	<ul style="list-style-type: none"> <li>○ Introduction to Motion module</li> <li>- Make NAO move: Control the walk, joints, effectors</li> <li>- Special features: Whole Body Motion</li> </ul>
12:30 – 14:00	LUNCH	
14:00 – 18:00	COMPLETE INTEGRATION EXERCISE	<ul style="list-style-type: none"> <li>○ Interface between modules</li> <li>○ Interface with Python and Choregraphe</li> <li>○ Manage several behaviors</li> </ul>



## 3. Attend a session

### Registration

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- Contact us to purchase a training session at [emea@aldebaran-robotics.com](mailto:emea@aldebaran-robotics.com)
- Register online and pick a date
- Wait for the confirmation
- Prepare your robot and your computer: they are required for the training (see after)

Registrations and cancellations are accepted at the latest 7 days before the training.

Number of seats is limited to 15 persons.

### Materials

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Get your computer and NAO robot ready as they are required for the training!

Go on the community website to:

- Flash your robot to the latest NAO OS version
- Set up the latest Choregraphe software suite on your laptop.

[Bring your own robot and your own laptop to the training](#)

### Customised Sessions

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Upon request, customised trainings can be organised:

- In other languages (eg: French and German)
- at your own site
- in any other programming language



## 4. Venue & Contacts

### Hours

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The training starts at 10:00 and finishes before 18:30.  
There is a lunch break around 12:30.

### Access

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Aldebaran HQ: 43, rue du Colonel Pierre Avia – 75015 Paris  
[By public transportation](#): [Metro](#) line n° 12. Stop at Coentim-Celton  
By driving or walking: See on [Google Map](#)

### Hotel

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Accommodation is at your own charge.  
Here are some hotels located nearby (click on it to be directed to the registration page):  
[Adagio – Porte de Versailles](#)                      [Classic Hotel Porte de Versailles](#)  
[Hotel Oceania](#)                                      [Hotel Mercure – Porte de Versailles](#)

### Food

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Breakfast, lunch and dinner are on your own charge. There are plenty of restaurants in the neighborhood, accessible by walking from our premises.

### Contacts

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For any other information, please contact [us at emea@aldebaran.com](mailto:us@emea@aldebaran.com)

**You are now ready to become an expert in robotics!**