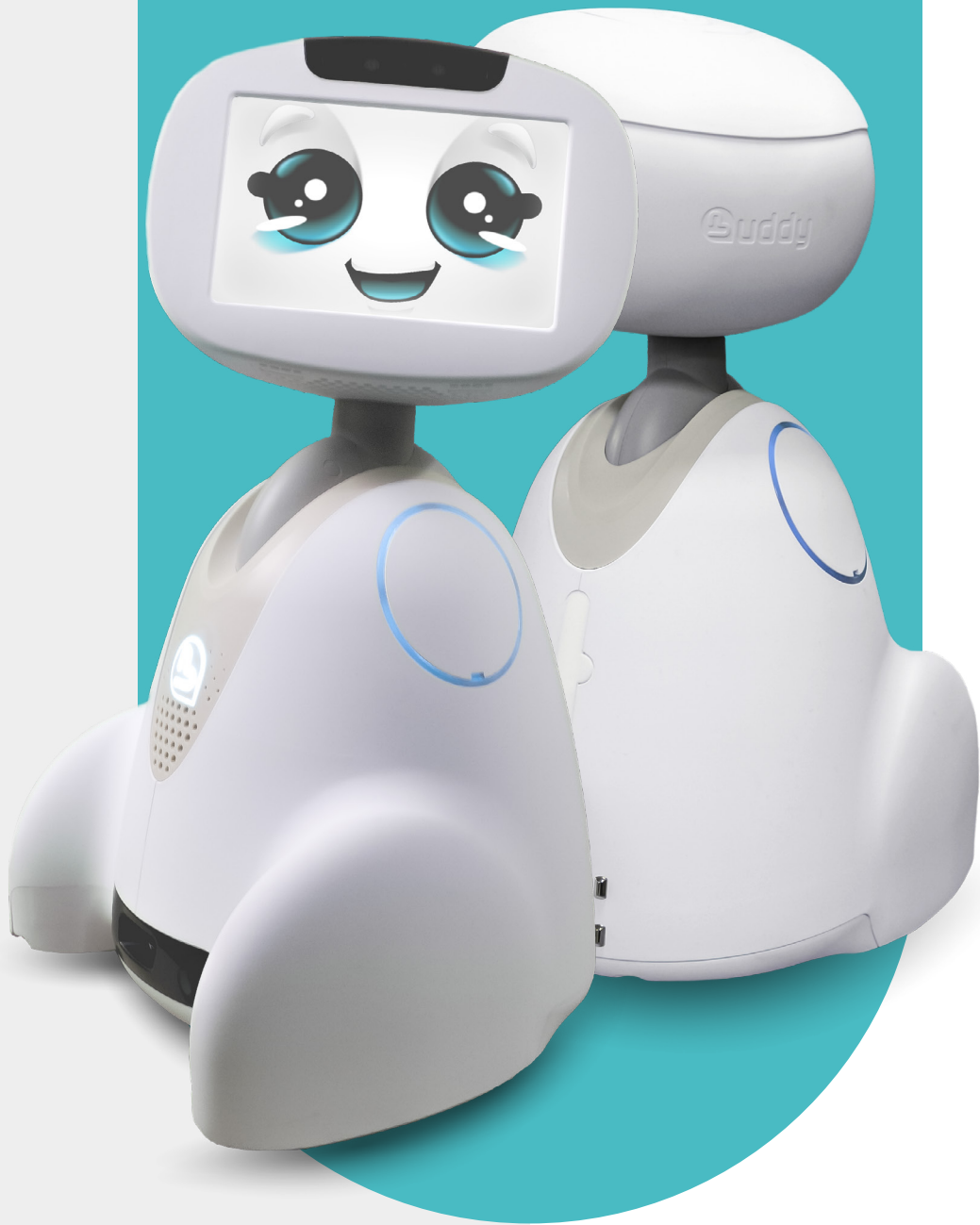
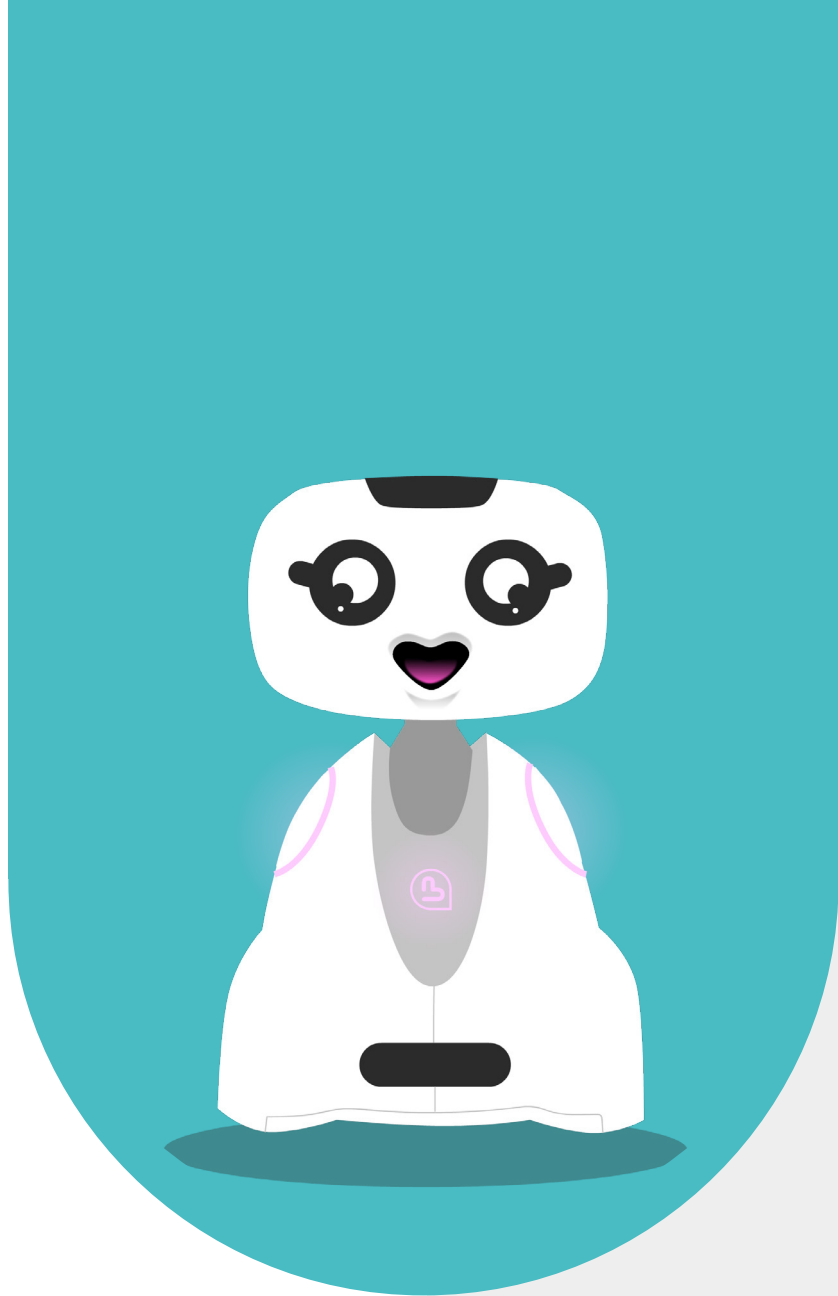


SOFTWARE DEVELOPMENT KIT (SDK)

BUDDY



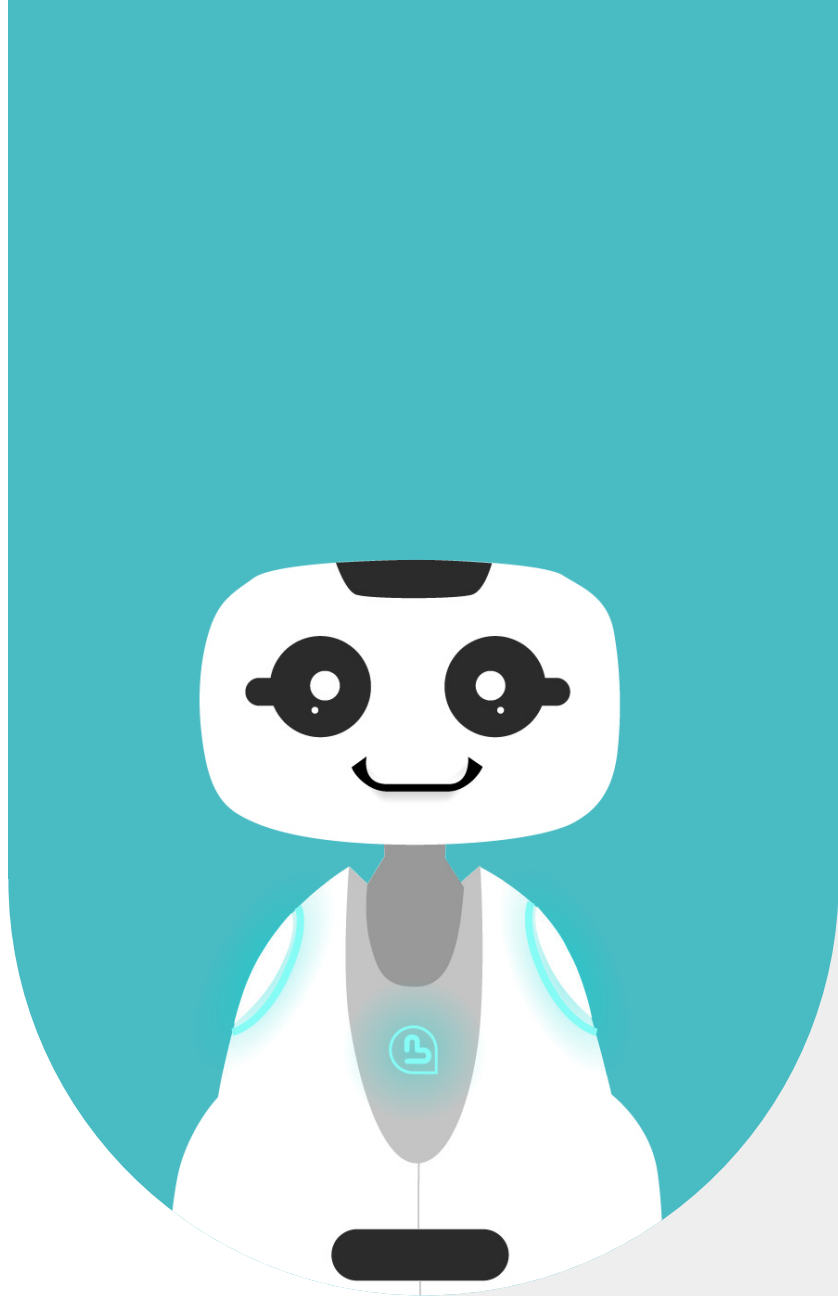
Buddy[®]
The Emotional Robot



1 - SUMMARY

1 - SUMMARY	2
2 - FOREWORD	4
2.1 - INTRO	5
2.2 - AN ANDROID APP?	5
2.3 - WHAT IS THE SDK?	5
3 - OUR SDK	6
3.1 - SDK FEATURES	7
ACTUATORS AND SENSORS	7
FACE AND INTERFACE	7
VOCAL INTERACTION	7
VISION	7
COMPANION	7
3.2 - WHAT IS INCLUDED WITH THE SDK	8
3.3 - EXAMPLES OF APPLICATIONS	8
3.4 - OTHER QUESTIONS :	9
4 - LIST OF SDK FUNCTIONS	10
4.1 - LIST OF SDK FUNCTIONS	11
MOTORS/ACTUATORS	11
SENSORS	11
FACE/UI (TOUCHSCREEN)	11
VOCAL INTERACTION	11
VISION	11
COMPANION	11





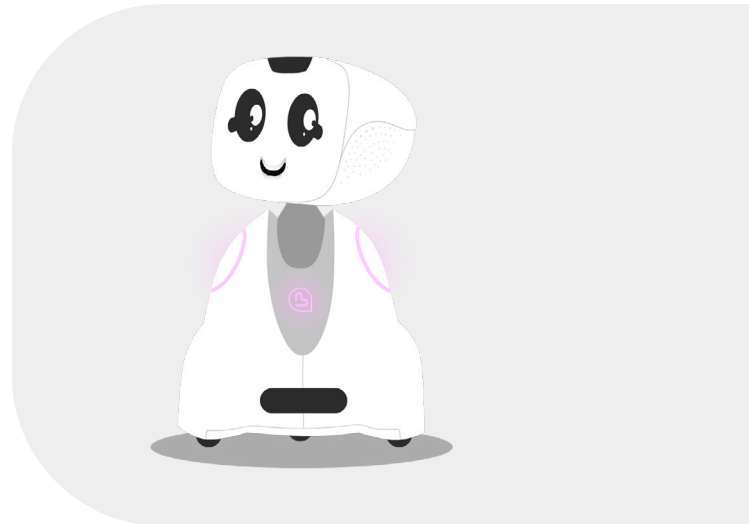
2 - FOREWORD

2.1 - INTRO

Buddy is an open platform that operates on Android. Like a smartphone or tablet, you can program your own Android app without any specific knowledge of robotics and install it on your Buddy! You will have access to various resources of the robot such as its cameras, sensors, motors, and its autonomous and emotional behaviors. It's also possible to use any Cloud API.

2.2 - AN ANDROID APP?

Yes, programming an app for Buddy simply means creating an app for a smartphone or tablet, but it will also control the robot's movements, reactions, and interactions.



This is primarily done using Java or Kotlin programming languages with the Android Studio IDE, and the developer community today includes millions of professionals and hobbyists worldwide.

The ease of use of the programming tools and the substantial amount of information shared by the community online (documentation, tutorials, open-source codes, etc.) means that a novice can learn to program an Android app for Buddy in just a few days.

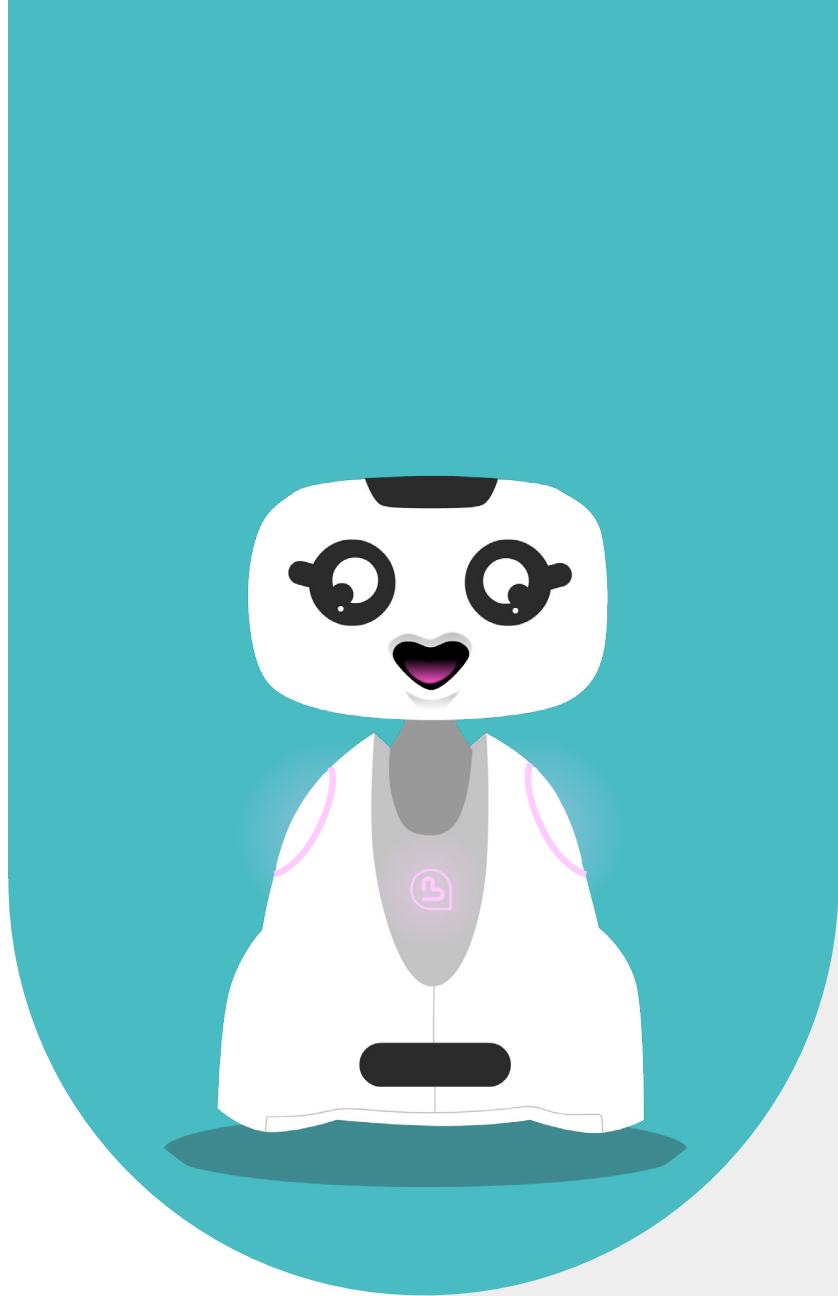
2.3 - WHAT IS THE SDK?

The SDK (or Software Development Kit) from Blue Frog Robotics is a Java library to be imported into your Android Studio project. Once integrated into your app, the SDK provides access to all the robot's functionalities through a Java API.

With just one line of code, you can make Buddy spin around or speak!

```
BuddySDK.Speech.startSpeaking(iText: "Hello my name is Buddy");
```

Example of a line of code that makes Buddy speak.



3 - OUR SDK

3.1 - SDK FEATURES

With the SDK, you will have access to the following functionalities of the robot:

ACTUATORS AND SENSORS

This allows you to control the robot's movements, its head, its wheels, and to access its sensors (e.g., obstacle detection sensors, touch sensors, moving the robot forward, etc.).

FACE AND INTERFACE

You can change Buddy's emotional facial expressions, display graphical interface elements, etc.

VOCAL INTERACTION

The SDK incorporates two essential technological components when you want to converse with Buddy: a voice transcription engine (Speech-to-Text) and a voice synthesis engine (Text-to-Speech). This allows Buddy to understand when someone is talking to it and to respond verbally.

VISION

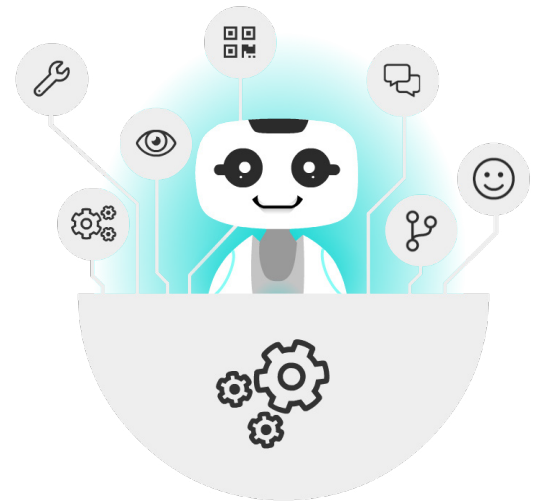
The SDK includes advanced computer vision functions. With the two cameras, you can detect and recognize faces, track people, detect movements, etc., but you can also access the video streams directly for your own processing.

COMPANION

From your app, you can enjoy the functionalities of Companion, which is Buddy's autonomous life engine. For example, making it roam around, follow someone with its gaze, etc.

3.2 - WHAT IS INCLUDED WITH THE SDK

- Access to the Maven repository where the SDK library is hosted.
- Comprehensive documentation of the SDK features with tutorials to get started.
- Support from a team of always smiling and available developers!
- Examples of applications to inspire you.



3.3 - EXAMPLES OF APPLICATIONS

- Imagine version 3.0 of the famous game «Red Light, Green Light» to allow children to play autonomously with Buddy, which will detect the children's movements and adjust the difficulty according to their abilities...
- Create interactive stories and scenarios in which you will have to talk to Buddy, hide, show things on the screen.
- Develop a security application that will allow Buddy to monitor the house during the occupants' absence.
- Integrate a LLM to create real emotional conversations with a character and unique reactions that truly give the impression of talking to a living character who engages with you, follows you with its gaze, turns to talk to you or only responds if you look at it to make sure you are talking to it and will remember your conversations.
- Use Buddy to keep the dog occupied during the day when it is alone and also allow you to connect remotely to see and talk to it.
- Create a companion suitable for specific types of people: People suffering from Alzheimer's, autistic individuals, etc.
- Develop a role-playing game with Buddy.
- Sky is the limit !

3.4 - OTHER QUESTIONS :

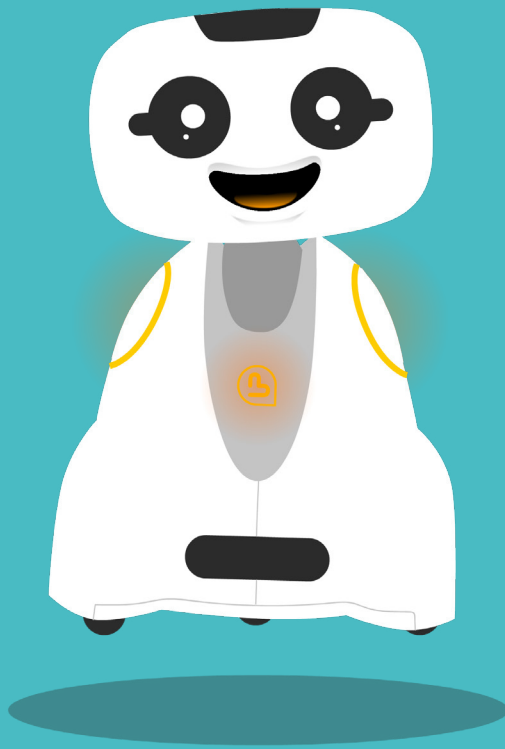
"Is it possible to use a programming language other than Java/Kotlin?"

By default, Android Studio only handles Java or Kotlin. However, it is entirely possible to call C++ code independently in an Android (Java/Kotlin) app.

"I am a mobile app developer but do not want to use Android Studio"

Officially, the SDK works with Android Studio, but other IDEs/environments (Flutter, Xamarin, Unity, etc.) may be compatible as long as importing a library from a Maven repository is possible. For now, Buddy is not compatible with ROS, but we are working on the possibility of integrating a ROS node in the near future.





4 - LIST OF SDK FUNCTIONS

4.1 - LIST OF SDK FUNCTIONS

(non exhaustive)

MOTORS/ACTUATORS

- Rotation
- Translation
- Linear/angular speed control of wheels
- Horizontal/vertical movements of the head
- LEDs

SENSORS

- Ultrasonic/Infrared distance sensors
- Touch sensors
- Microphones
- IMU

FACE/UI (TOUCHSCREEN)

- Change facial expression from a collection we provide
- Make a facial gesture from a collection we provide
- Control the direction of gaze
- Move the lips
- Display pop-ups
- Display interface buttons

VOCAL INTERACTION

- Speech-to-text
- Text-to Speech

VISION

- Person detection
- Face detection
- Facial recognition
- Color recognition
- Visual tracking of person
- Motion detection
- Reading of AprilTags
- Reading of QR Codes

COMPANION

- Stroll
- Person following
- Docking at the charging station
- Preprogrammed mimics/behaviors (BI)