

# Functional specification - Clémentine Curel

## 1. What it is?

To put you in the context, this device will be used to make sure that the students of ALGOSUP talk English during the project time. The goal is to listen to conversations and detect when they talk English or French.

A sound or a color will be emitted following the language spoken (green for good English and red for french).

## 2. Target

This device will be used by the students and the staff of ALGOSUP for the moment.

Also, in the future, for people who want to recognize a language.

## 3. Definitions of terms

Artificial Intelligence (AI): the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Deep Learning: a type of machine learning based on artificial neural networks in which multiple layers of processing are used to extract progressively higher-level features from data.

## 4. Use cases

The device will be in each project room or on the computer for the students.

The French students used to talk french instead of speaking English.

Each time the students talk french an alarm or a colour will be displayed. This is to help the students to speak English every time.

This software will have to be an artificial intelligence with deep learning of the language.

## 5. Collect data

We know two ways the collection of data:

- Register the voice of the students by putting microphones in rooms and having consistent data. With this way of doing things, we will have to listen to each recording to recognize good English, bad English, and French.
- The second way is to use data from the internet with a bank of data. The advantage is the number of data that we can have very quickly and there are no real disadvantages.

## 6. Privacy

This device will listen to all the conversations in the school, so we want to be sure that the conversations are not recorded or used for something else than the detecting language.

We believe there is no need to store records in a cloud to detect a language. In order to avoid the ability to access data, the device will not be connected to the Internet. It will also be difficult to hack the device because, in order to hack it, we will have to have physical contact with the device.