

# **Instrument2**

## **About**

Instrument2 is an instrument that uses its microphone for recognizing voice commands, to train a neural network built with the Google TensorFlow library. This allows you to control different multimedia outputs.

The instrument can be programmed with a computer and then run as a standalone instrument, or you can use its serial port to communicate with your computer for debugging or interfacing with other software.

## **Installation**

Follow the instructions on `installation.md`.

## **Wiring**

Follow the instructions on `wiring.md`.

## **Code examples**

`hello_tiny_world`: this is an example that cycles through all the LEDs and their colors.

## **Data collection**

Open the Arduino sketch

## **Training**

Open your terminal and go to the `instruments` folder.

```
cd instruments
```

Activate the virtual environment

```
source env/bin/activate
```

Run Jupyter lab

```
jupyter-lab
```

Open the window on your web browser, and navigate to the notebook `Instrument2.ipynb`

## **Deploying**

Open the Arduino sketch