

TinyML4D
An initiative to make Embedded Machine Learning
education available to everyone globally



TinyML Kit Connection to Edge Impulse Studio

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Set up connection between Arduino Nano
and Edge Impulse

Login - Edge Impulse

studio.edgeimpulse.com/login

EDGE IMPULSE

Log in

rovai@mjrobot.org

.....

Forgot your password?

Log in

Don't have an account? [Sign up](#)



Start building embedded machine learning models today.

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Select project - Edge Impulse

studio.edgeimpulse.com/studio/select-project

EDGE IMPULSE

MJRoBot (Marcelo Rovai)

Select project

Select your Edge Impulse project, or create a new one.

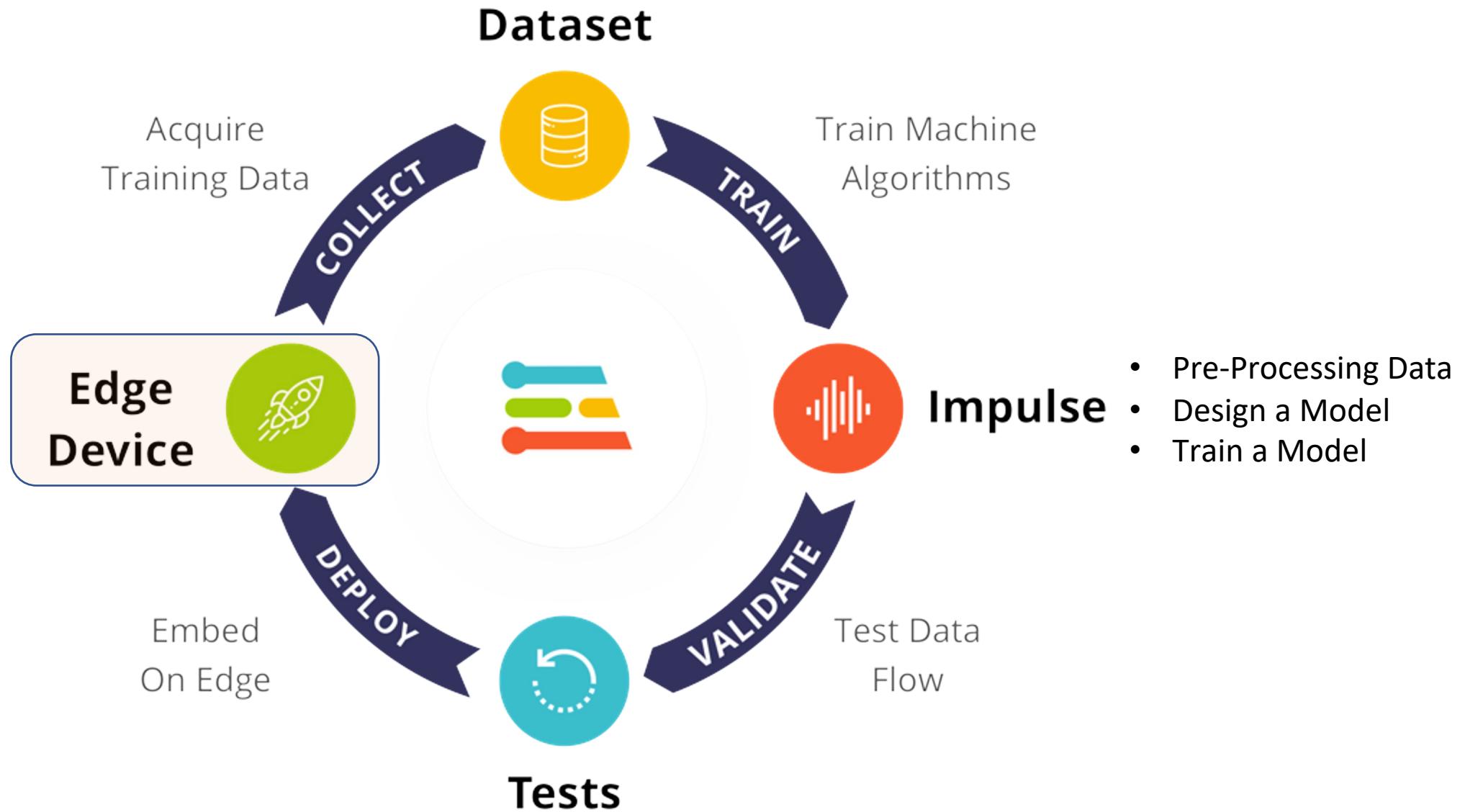
NAME	COLLABORATORS
MJRoBot (Marcelo Rovai) / iESTI01 - Nano Motion Classification	?
MJRoBot (Marcelo Rovai) / oi_rovis_kws	?
MJRoBot (Marcelo Rovai) / Eggs AI	?
MJRoBot (Marcelo Rovai) / Accelerometer-Nano-Ble-IoT	?
MJRoBot (Marcelo Rovai) / video_tinyml_raw	?
MJRoBot (Marcelo Rovai) / Pico_Motion_Detection	?
MJRoBot (Marcelo Rovai) / oi_rovis_kws_meetup	?

Create project

Enter a name for your new project

Cancel Create new project

iESTI01 - Nano Motion Classification



Devices - IESTI01 - Nano Motic

studio.edgeimpulse.com/studio/61345/devices

MJRoBot (Marcelo Rovai)

EDGE IMPULSE

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Data acquisition

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Create impulse

EON Tuner

Retrain model

Live classification

Model testing

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Deployment

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DEVICES (IESTI01 - NANO MOTION CLASSIFICATION)

Your devices

These are devices that are connected to the Edge Impulse remote management API, or have posted data to the ingestion SDK.

Collect data

You can collect data from development boards, from your own devices, or by uploading an existing dataset.

Connect a fully supported development board

Get started with real hardware from a wide range of silicon vendors - fully supported by Edge Impulse.

Browse dev boards

Use your mobile phone

Use your computer

Data from any device with the data forwarder

Upload data

Integrate with your cloud

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<https://docs.edgeimpulse.com/docs/fully-supported-development-boards>

Devices - IESTI01 - Nano Motic Overview - Edge Impulse Docu +

docs.edgeimpulse.com/docs/development-platforms/fully-supported-development-boards

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DEVELOPMENT PLATFORMS
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Officially supported MCU targets >
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Powered By GitBook

Overview

There is a list of development boards that are fully supported by Edge Impulse. These boards come with a special firmware which enables data collection from all their sensors, allows you to build new ready-to-go binaries that include your trained impulse, and come with examples on integrating your impulse with your custom firmware. These boards are the perfect way to start building Machine Learning solutions on real embedded hardware.

Officially supported MCU targets

- Arduino Nano 33 BLE Sense
- Arduino Nicla Sense ME
- Arduino Portenta H7 + Vision Shield
- Espressif ESP32
- Himax WE-I Plus
- Nordic Semi nRF52840 DK
- Nordic Semi nRF5340 DK
- Nordic Semi nRF9160 DK
- Nordic Semi Thingy:91
- Open MV Cam H7 Plus
- Silicon Labs xG24 Dev Kit
- Silicon Labs Thunderboard Sense 2
- Sony's Spresense
- ST B-L475E-IOT01A
- Syntiant Tiny ML Board
- TI CC1352P Launchpad
- Raspberry Pi RP2040



EI/Arduino CLI

Devices - SciTinyML-Motion-A X Arduino Nano 33 BLE Sense - E X Arduino Nano 33 BLE Sense - E X +

docs.edgeimpulse.com/docs/development-boards/arduino-nano-33-ble-sense

EDGE IMPULSE Guides API Reference Forum Search... Search...

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Arduino Nano 33 BLE Sense

The Arduino Nano 33 BLE Sense is a tiny development board with a Cortex-M4 microcontroller, motion sensors, a microphone and BLE - and it's fully supported by Edge Impulse. You'll be able to sample raw data, build models, and deploy trained machine learning models directly from the studio. It's available for around 30 USD from [Arduino](#) and a wide range of distributors.

You can also use the [Arduino Tiny Machine Learning Kit](#) to run image classification models on the edge with the Arduino Nano and attached OV7675 camera module (or [connect the hardware together via jumper wire and a breadboard](#) if purchased separately).

The Edge Impulse firmware for this development board is open source and hosted on GitHub:
[edgeimpulse/firmware-arduino-nano-33-ble-sense](#).



Arduino Nano 33 BLE Sense

Installing dependencies

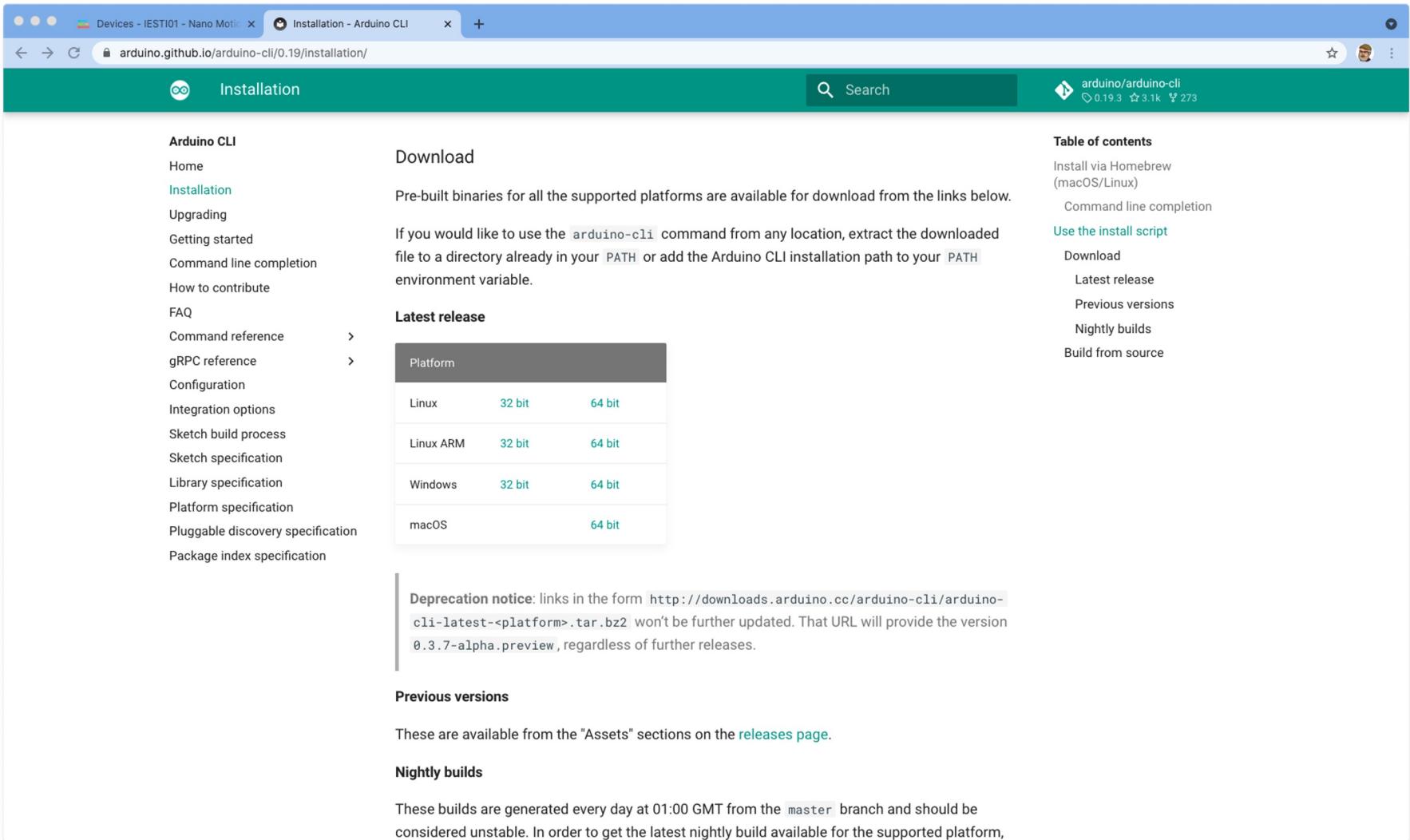
To set this device up in Edge Impulse, you will need to install the following software:

1. [Edge Impulse CLI](#).
2. [Arduino CLI](#).
 - Here's an [instruction video for Windows](#).
 - The [Arduino website](#) has instructions for macOS and Linux.

(Note that the 1. Edge Impulse CLI is not necessary for Arduino Nano-33. We will use WebUSB instead)

Go to 2. Arduino CLI

Arduino CLI



The screenshot shows the "Installation" page for the Arduino CLI on the Arduino GitHub repository. The page has a navigation sidebar on the left with links like Home, Installation (which is active), Upgrading, Getting started, Command line completion, How to contribute, FAQ, Command reference, gRPC reference, Configuration, Integration options, Sketch build process, Sketch specification, Library specification, Platform specification, Pluggable discovery specification, and Package index specification. The main content area has a "Download" section with instructions for extracting binaries and using the command from anywhere. It features a "Latest release" table:

Platform	32 bit	64 bit
Linux	32 bit	64 bit
Linux ARM	32 bit	64 bit
Windows	32 bit	64 bit
macOS		64 bit

Below the table is a deprecation notice about old URLs. There are sections for "Previous versions" (links to releases) and "Nightly builds" (information about daily builds from master). A "Table of contents" sidebar on the right lists various installation and usage options.



See this video for Windows installation: <https://www.youtube.com/watch?v=1jMWsFER-Bc>

Arduino CLI Installation Summary

If you're on Windows:

- Unzip the .zip file to C:\Program Files\arduino-cli
- Open System Properties > Advanced > Environment Variables
- Path under "user variables" > Edit
- Add C:\Program Files\arduino-cli

If you're on macOS:

- I recommend using the curl method or homebrew shown on the installation page:
<https://arduino.github.io/arduino-cli/0.21/installation/>
- if you use the curl method, it likely installs arduino-cli to ~/bin. That might not be on your path. So, you might need to run: `export PATH=$PATH:~/bin`

Devices - SciTinyML-Motion-A X Arduino Nano 33 BLE Sense - E Installation - Arduino CLI X | + docs.edgeimpulse.com/docs/development-boards/arduino-nano-33-ble-sense

EDGE IMPULSE

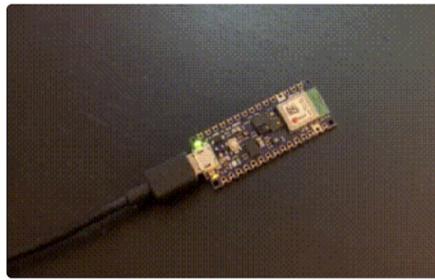
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Nordic Semi nRF5340 DK
Nordic Semi nRF9160 DK
Nordic Semi Thingy:91
SiLabs Thunderboard Sense 2
Sony's Spresense
Syntiant Tiny ML Board

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1 **1. Connect the development board to your computer**
Use a micro-USB cable to connect the development board to your computer. Then press RESET twice to launch into the bootloader. The on-board LED should start pulsating to indicate this.



Press RESET twice quickly to launch the bootloader on the Arduino Nano 33 BLE Sense.

2 **2. Update the firmware**
The development board does not come with the right firmware yet. To update the firmware:

1. Download the latest Edge Impulse firmware, and unzip the file.
2. Open the flash script for your operating system (`flash_windows.bat`, `flash_mac.command` or `flash_linux.sh`) to flash the firmware.
3. Wait until flashing is complete, and press the RESET button once to launch the new firmware.

3 **3. Setting keys**
From a command prompt or terminal, run:

```
1 edge-impulse-daemon
```

MacOS

```
mjrovai — flash_mac.command — 126x44
Last login: Tue Nov  9 12:15:56 on ttys002
You have new mail.
/Users/mjrovai/Downloads/arduino-nano-33-ble-sense\ \(2\)/flash_mac.command ; exit;

The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
(base) MacBook-Pro-de-Marcelo:~ mjrovai$ /Users/mjrovai/Downloads/arduino-nano-33-ble-sense\ \(2\)/flash_mac.command ; exit;
Finding Arduino Mbed core...
Finding Arduino Mbed OK
Finding Arduino Nano 33 BLE...
Finding Arduino Nano 33 BLE OK
Flashing board...
Device      : nRF52840-QIAA
Version     : Arduino Bootloader (SAM-BA extended) 2.0 [Arduino:IKXYZ]
Address     : 0x0
Pages       : 256
Page Size   : 4096 bytes
Total Size  : 1024KB
Planes      : 1
Lock Regions: 0
Locked      : none
Security    : false
Erase flash

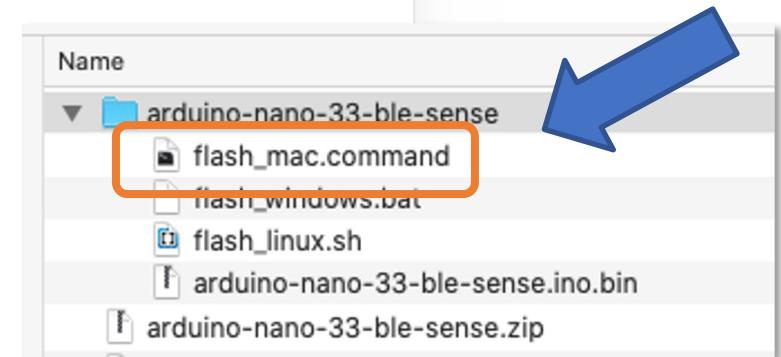
Done in 0.001 seconds
Write 280848 bytes to flash (69 pages)
[=====] 100% (69/69 pages)
Done in 10.984 seconds

Flashed your Arduino Nano 33 BLE development board.
To set up your development with Edge Impulse, run 'edge-impulse-daemon'
To run your impulse on your development board, run 'edge-impulse-run-impulse'
logout
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

3.Nano-33 LED Stop Flashing

1. Press Nano-33 Reset button Twice
2. With Nano-33 LED Flashing:



Windows 10

```
Prompt de Comando
Microsoft Windows [versão 10.0.19041.1052]
(c) Microsoft Corporation. Todos os direitos reservados.

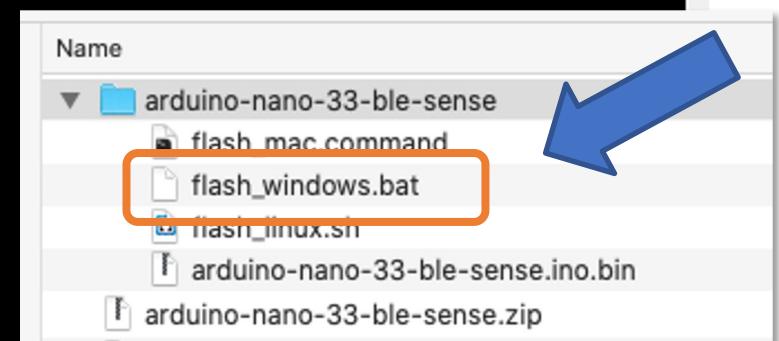
C:\Users\GUILH>arduino-cli
Arduino Command Line Interface (arduino-cli).

Usage:
  arduino-cli [command]

Examples:
  arduino-cli <command> [flags...]

Available Commands:
  board          Arduino board commands.
  burn-bootloader Upload the bootloader.
  cache          Arduino cache commands.
  compile        Compiles Arduino sketches.
  completion    Generates completion scripts
  config         Arduino configuration commands.
  core           Arduino core operations.
  daemon         Run as a daemon on port 50051
  debug          Debug Arduino sketches.
  help           Help about any command
  lib             Arduino commands about libraries.
  outdated       Lists cores and libraries that can be upgraded
  sketch          Arduino CLI sketch commands.
  update         Updates the index of cores and libraries
  upgrade        Upgrades installed cores and libraries.
  upload         Upload Arduino sketches.
  version        Shows version number of Arduino CLI.
```

1. Press Nano-33 Reset button Twice
2. With Nano-33 LED Flashing:



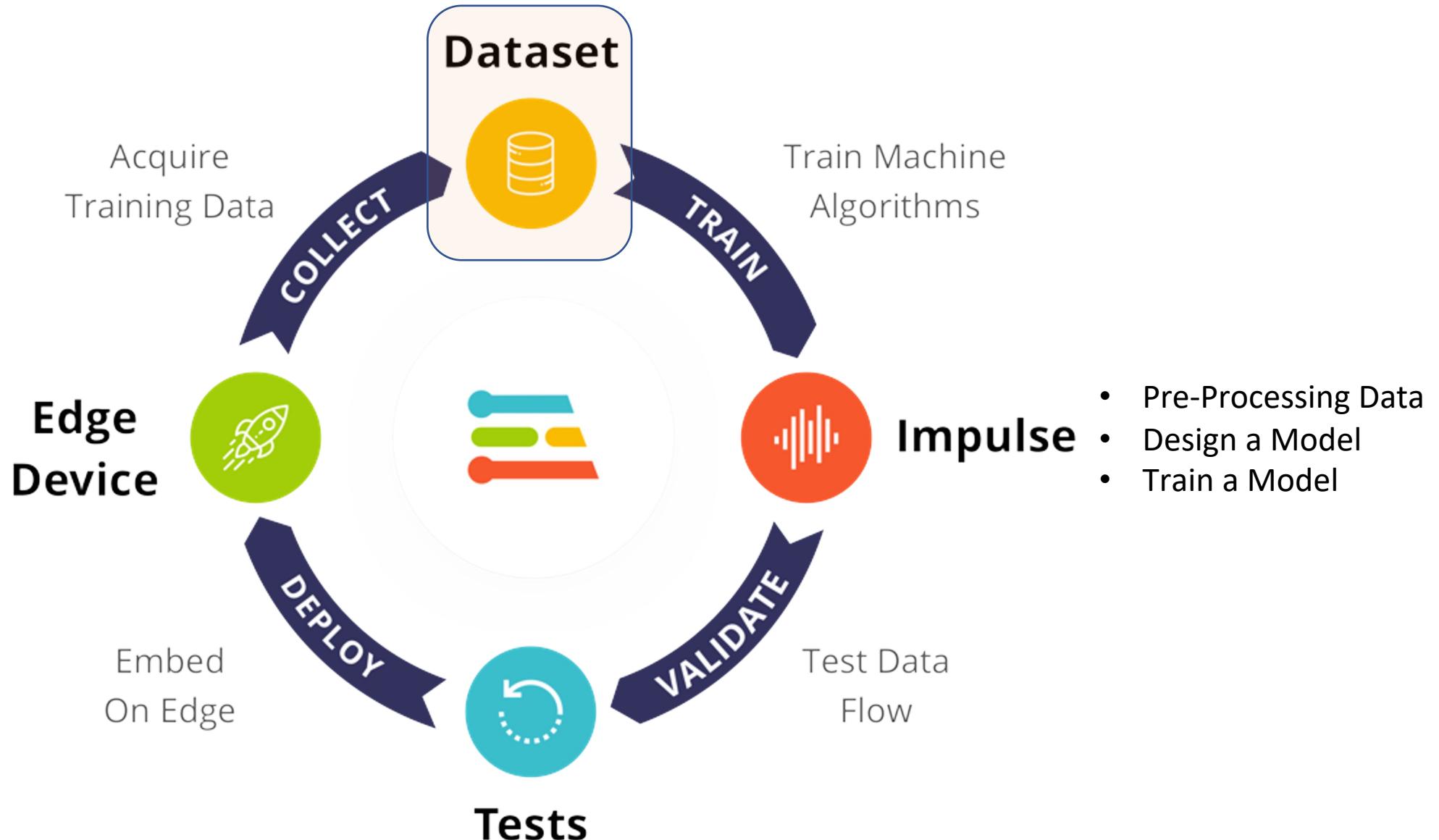
Windows 10

```
cmd C:\WINDOWS\system32\cmd.exe
Finding Arduino Mbed core...
arduino:mbed_nano 2.0.0      2.0.0  Arduino Mbed OS Nano Boards
Finding Arduino Mbed core OK
Finding Arduino Nano 33 BLE...
Finding Arduino Nano 33 BLE OK at COM11
arduino:mbed_nano 2.0.0      2.0.0  Arduino Mbed OS Nano Boards
Device        : nRF52840-QIAA
Version       : Arduino Bootloader (SAM-BA extended) 2.0 [Arduino:IKXYZ]
Address       : 0x0
Pages         : 256
Page Size     : 4096 bytes
Total Size    : 1024KB
Planes        : 1
Lock Regions : 0
Locked        : none
Security      : false
Erase flash

Done in 0.002 seconds
Write 525440 bytes to flash (129 pages)
[=====] 100% (129/129 pages)
Done in 22.296 seconds
Flashed your Arduino Nano 33 BLE development board
To set up your development with Edge Impulse, run 'edge-impulse-daemon'
To run your impulse on your development board, run 'edge-impulse-run-impulse'
Pressione qualquer tecla para continuar. . .
```

Nano-33 LED Stop Flashing

Sensor's Test



The screenshot shows the Edge Impulse Studio interface for data acquisition. A modal window is open, prompting the user to connect to a serial port. The left sidebar shows various project options like Dashboard, Devices, and Data acquisition. The main area displays a list of available ports, with "cu.usbmodem145101" highlighted and circled in orange. A large blue arrow labeled "2" points to this highlighted item. Below the list is a "Connect" button, which is also circled in orange and has a large blue arrow labeled "3" pointing to it. To the right of the modal, there's a "Record new data" section with a "Connect using WebUSB" button, which is circled in orange and has a large blue arrow labeled "1" pointing to it. The top right corner shows the user profile "MJRoBot (Marcelo Rovai)".

studio.edgeimpulse.com wants to connect to a serial port

cu.Bluetooth-Incoming-Port
cu.MALS
cu.RovaisAirPods-Wireless
cu.SOC
Nano 33 BLE (cu.usbmodem145101)

Record new data

No devices connected to the remote management API.

RAW DATA
Click on a sample to load...

1 Connect using WebUSB

2

3

WebUSB works fine with Chrome

DATA ACQUISITION (IESTI01 - NANO MOTION CLASSIFICATION)

Training data Test data

Did you know? You can capture data from any device or development board, or upload your existing datasets - [Show options](#)

DATA COLLECTED

No data collected yet

Let's collect some data

Record new data

Device: 36:17:55:F9:70:F7

Label: terrestrial (highlighted with orange border)

Sample length (ms.): 10000

Sensor: Built-in accelerometer

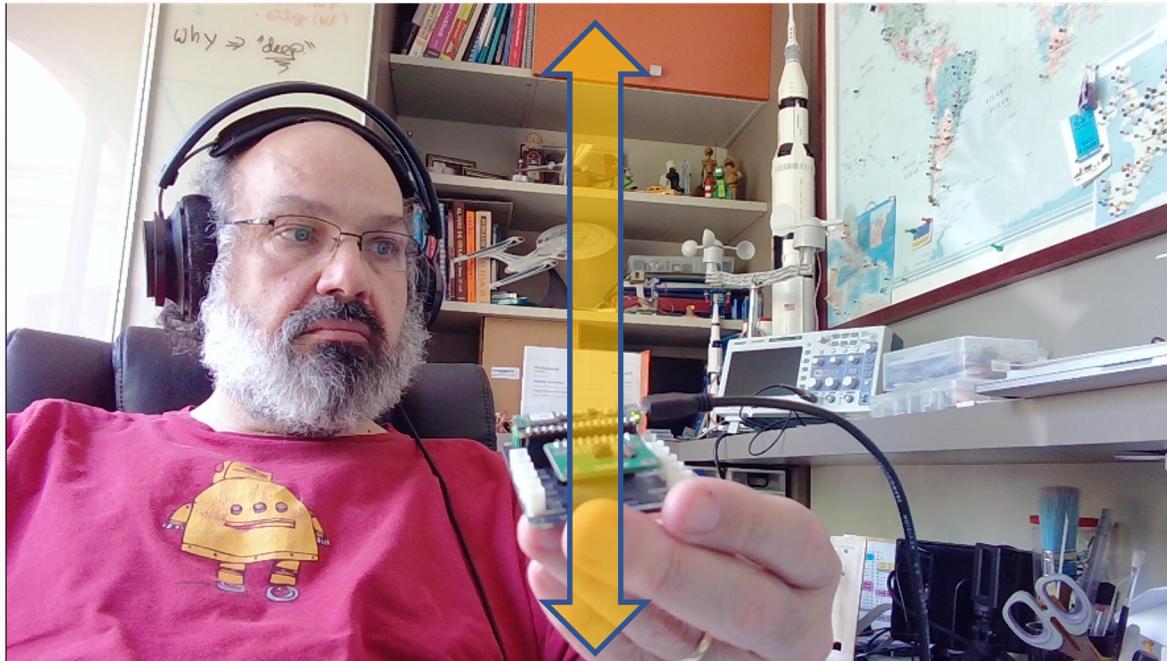
Frequency: 100Hz

Start sampling

RAW DATA
Click on a sample to load...

The screenshot shows the Edge Impulse Data Acquisition interface. On the left sidebar, under the 'Data acquisition' section, there is a 'Label' field which is highlighted with an orange border. Two large blue arrows point from this highlighted field towards the 'Start sampling' button located on the right side of the interface. The 'Start sampling' button is a dark blue button with white text.

Accelerometer



DATA ACQUISITION (IESTI01 - NANO MOTION CLASSIFICATION)

Training data Test data

Did you know? You can capture data from any device or development board, or upload your existing datasets - [Show options](#)

DATA COLLECTED 3m 20s TRAIN / TEST SPLIT 100% / 0%

SAMPLE NAME	LABEL	ADDED	LENGTH
lift.json.2jvhbt7	lift	Today, 14:42:04	10s
lift.json.2jvh9pe3	lift	Today, 14:41:45	10s
lift.json.2jvh96uh	lift	Today, 14:41:26	10s
lift.json.2jvh8j6q	lift	Today, 14:41:06	10s
lift.json.2jvh80rg	lift	Today, 14:40:47	10s
lift.json.2jvh7g2v	lift	Today, 14:40:30	10s
lift.json.2jvh6uqu	lift	Today, 14:40:12	10s
lift.json.2jvh6c6a	lift	Today, 14:39:53	10s
lift.json.2jvh5qbe	lift	Today, 14:39:35	10s
lift.json.2jvh55hs	lift	Today, 14:39:14	10s
terrestrial.json.2jv...	terrestrial	Today, 14:26:56	10s
terrestrial.json.2jv...	terrestrial	Today, 14:26:29	10s

Record new data

Device: Nano

Label: lift

Sensor: Sensor with 3 axes (accX, accY, accZ)

Sample length (ms.): 10000

Frequency: 100Hz

Start sampling

RAW DATA lift.json.2jvhbt7

The screenshot shows the Edge Impulse Studio interface. On the left, a sidebar lists various project management and documentation links. The main area is divided into several sections: a top bar showing 'DATA COLLECTED 10s' and 'LABELS 1'; a central 'Collected data' table with one entry ('unifei.29js37tq'); a 'Record new data' section where the 'Sensor' dropdown is highlighted with an orange box and set to 'Built-in microphone'; and a 'RAW DATA' visualization for the sample 'unifei.29js37tq' showing a waveform and numerical values from -10000 to 10000 across time points 0, 1051, 2103, 3154, 4206, 5258, 6309, 7361, 8413, and 9464. A large circular watermark is overlaid on the bottom left of the visualization.

Camera



Data acquisition - IESTI01

studio.edgeimpulse.com/studio/114253/acquisition/training?page=1

Record new data

Device ②

36:17:55:F9:70:F7

Label

medicine

Sensor

Camera (128x96)

Camera feed

Start sampling

RAW DATA

Click on a sample to load...

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A screenshot of the Edge Impulse Data Acquisition interface. At the top, the title "Data acquisition - IESTI01" and the URL "studio.edgeimpulse.com/studio/114253/acquisition/training?page=1" are shown. Below this, the heading "Record new data" is displayed. Under "Device", the identifier "36:17:55:F9:70:F7" is listed. The "Label" field contains the text "medicine". The "Sensor" field is highlighted with an orange rectangle and contains the text "Camera (128x96)". To the right, a "Camera feed" window shows a small image of a blister pack of medicine. A large blue button labeled "Start sampling" is located on the right side. At the bottom, a dark blue bar displays the text "RAW DATA" and "Click on a sample to load...". The footer of the page includes the copyright notice "© 2022 Edgimpulse Inc. All rights reserved".

Addendum: Using Edge Impulse CLI

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- [Himax WE-I Plus](#)
- [Nordic Semi nRF52840 DK](#)
- [Nordic Semi nRF5340 DK](#)
- [SiLabs Thunderboard Sense 2](#)
- [Sony's Spresense](#)
- [Arduino Portenta H7 + Vision shield \(preview\)](#)
- [Raspberry Pi 4](#)
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COMMUNITY BOARDS

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- [Agora Product Development Kit](#)

EDGE IMPULSE FOR LINUX

Installation

Edge Impulse CLI optional Installation

This Edge Impulse CLI is used to control local devices, act as a proxy to synchronise data for devices that don't have an internet connection, and to upload and convert local files. The CLI consists of seven tools:

- [edge-impulse-daemon](#) - configures devices over serial, and acts as a proxy for devices that do not have an IP connection.
- [edge-impulse-uploader](#) - allows uploading and signing local files.
- [edge-impulse-data-forwarder](#) - a very easy way to collect data from any device over a serial connection, and forward the data to Edge Impulse.
- [edge-impulse-run-impulse](#) - show the impulse running on your device.
- [edge-impulse-blocks](#) - create organizational transformation blocks.
- [eta-flash-tool](#) - to flash the Eta Compute ECM3532 AI Sensor.
- [himax-flash-tool](#) - to flash the Himax WE-I Plus.

Connect to devices without the CLI? Recent versions of Google Chrome and Microsoft Edge can connect directly to fully-supported development boards, without the CLI. See [this blog post](#) for more information.

Installation - macOS and Windows

- 
- 1. Install [Python 3](#) on your host computer.
 - 2. Install [Node.js](#) v14 or higher on your host computer.
 - For Windows users, install the Additional Node.js tools when prompted. You may skip this setup if you have Visual Studio 2015 or more.
 - 3. Install the CLI tools via:

```
npm install -g edge-impulse-cli --force
```

You should now have the tools available in your PATH.

Installation - Linux/Ubuntu and Raspbian OS

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3. Install the CLI tools via:

```
npm install -g edge-impulse-cli --force
```

You should now have the tools available in your PATH.

Installation - Linux/Ubuntu and Raspbian OS



Alternative Data Capture using EI CLI: \$ edge-impulse-data-forwarder

The screenshot shows the Arduino IDE interface with the title bar "Capture_Ard33_Sense_IMU_Acc | Arduino 1.8.16". The code editor contains the following C++ code:

```
1 #include <Arduino_LSM9DS1.h>
2
3 #define CONVERT_G_TO_MS2 9.80665f
4 #define FREQUENCY_HZ 100
5 #define INTERVAL_MS (1000 / (FREQUENCY_HZ + 1))
6
7 void setup() {
8     Serial.begin(9600);
9     while (!Serial);
10    Serial.println("Started");
11
12    if (!IMU.begin()) {
13        Serial.println("Failed to initialize IMU!");
14        while (1);
15    }
16 }
17
18 void loop() {
19     static unsigned long last_interval_ms = 0;
20     float x, y, z;
21
22    if (millis() > last_interval_ms + INTERVAL_MS) {
23        last_interval_ms = millis();
24
25        IMU.readAcceleration(x, y, z);
26
27        Serial.print(x * CONVERT_G_TO_MS2);
28        Serial.print(',');
29        Serial.print(y * CONVERT_G_TO_MS2);
30        Serial.print(',');
31        Serial.println(z * CONVERT_G_TO_MS2);
32    }
33 }
```

The status bar at the bottom indicates "Arduino Nano 33 BLE on /dev/cu.usbmodem145101".

The terminal window has a title bar "mjrovai — node /usr/local/bin/edge-impulse-data-forwarder — 72x42". The session starts with a standard macOS login message. Then it displays the Edge Impulse data forwarder version information and endpoints:

```
Last login: Thu Nov 4 19:04:50 on ttys000
You have new mail.

The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.

[[base] MacBook-Pro-de-Marcelo:~ mjrovai$ edge-impulse-data-forwarder
Edge Impulse data forwarder v1.15.16
Endpoints:
  Websocket: wss://remote-mgmt.edgeimpulse.com
  API: https://studio.edgeimpulse.com/v1
  Ingestion: https://ingestion.edgeimpulse.com
```

It then logs a connection attempt to a local serial port:

```
[SER] Connecting to /dev/tty.usbmodem145101
[SER] Serial is connected (4A:5A:36:17:55:F9:70:F7)
```

It connects to a remote management endpoint:

```
[WS ] Connecting to wss://remote-mgmt.edgeimpulse.com
[WS ] Connected to wss://remote-mgmt.edgeimpulse.com
```

A prompt asks for a project selection:

```
? To which project do you want to connect this device?
```

The list of available projects includes:

- MJRobot (Marcelo Rovai) / IESTI01 - Covid-19: Detection by Cough
- MJRobot (Marcelo Rovai) / TinyML Kit Camera test
- MJRobot (Marcelo Rovai) / Harvard - Person Detection
- MJRobot (Marcelo Rovai) / Wio - Gesture Recognition
- MJRobot (Marcelo Rovai) / Cifar10_Image_Classification
- MJRobot (Marcelo Rovai) / Bean Disease Classifier
- MJRobot (Marcelo Rovai) / SciTinyML-Motion-Anomaly-Project
- MJRobot (Marcelo Rovai) / 1-Hands-On-SciTinyML-Motion-Project
- MJRobot (Marcelo Rovai) / ESP32-Motion-Classification
- MJRobot (Marcelo Rovai) / ESP32_KWS_Project
- > MJRobot (Marcelo Rovai) / IESTI01 - Nano Motion Classification
- MJRobot (Marcelo Rovai) / Motion-Project
- MJRobot (Marcelo Rovai) / Blender - Motion Detection
- MJRobot (Marcelo Rovai) / Key_Word_Spotting
- MJRobot (Marcelo Rovai) / Oi_Rovis_Key_Word_Spotting
- MJRobot (Marcelo Rovai) / Sound-Classification-Blender-Faucet
- MJRobot (Marcelo Rovai) / oi_rovis_kws
- MJRobot (Marcelo Rovai) / Eggs AI
- MJRobot (Marcelo Rovai) / Accelerometer-Nano-Ble-IoT
- MJRobot (Marcelo Rovai) / video_tinyml_raw

At the bottom, it says "(Move up and down to reveal more choices)".

```
mjrovai — node /usr/local/bin/edge-impulse-data-forwarder — 117x26
(base) MacBook-Pro-de-Marcelo:~ mjrovai$ 
(base) MacBook-Pro-de-Marcelo:~ mjrovai$ 
(base) MacBook-Pro-de-Marcelo:~ mjrovai$ edge-impulse-data-forwarder
[Edge Impulse data forwarder v1.13.16
[Endpoints:
[ Websocket: wss://remote-mgmt.edgeimpulse.com
  API:      https://studio.edgeimpulse.com/v1
  Ingestion: https://ingestion.edgeimpulse.com

[SER] Connecting to /dev/tty.usbmodem145101
[SER] Serial is connected (4A:5A:36:17:55:F9:70:F7)
[WS ] Connecting to wss://remote-mgmt.edgeimpulse.com
[WS ] Connected to wss://remote-mgmt.edgeimpulse.com

? To which project do you want to connect this device? MJRoBot (Marcelo
Rovai) / IESTI01 - Nano Motion Classification
[SER] Detecting data frequency...
[SER] Detected data frequency: 100Hz 
? 3 sensor axes detected (example values: [-8.13, -8.34, 9.81]). What do y
ou want to call them? Separate the names with ','; accX, accY, accZ
? What name do you want to give this device? Nano 
[WS ] Device "Nano" is now connected to project IESTI01 - Nano Motion Classification"
[WS ] Go to https://studio.edgeimpulse.com/studio/61345/acquisition/training to build your machine learning model!

```

Devices - IESTI01 - Nano Motic

studio.edgeimpulse.com/studio/61345/devices

EDGE IMPULSE

DEVICES (IESTI01 - NANO MOTION CLASSIFICATION)

MJRoBot (Marcelo Rovai)

Your devices

+ Connect a new device

These are devices that are connected to the Edge impulse remote management API, or have posted data to the ingestion SDK.

NAME	ID	TYPE	SENSORS	REMOTE M...	LAST SEEN
 Nano	4A:5A:36:17:55:F9:70:F7	DATA_FORWARDER	 Sensor with 3 axes (accX, accY, accZ)		Today, 12:42:15
 36:17:55:F9:70:F7	36:17:55:F9:70:F7	ARDUINO_NANO33BLE	 Built-in accelerometer, Built-in microphone		Today, 12:26:49

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Impulse design

Create impulse

EON Tuner

Retrain model

Live classification

Model testing

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GETTING STARTED

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Thanks

TinyML4D

An initiative to make Embedded Machine
Learning education available to everyone globally



UNIFEI