TinyTrainable

About

TinyTrainable is an Arduino library, part of the project Tiny Trainable Instruments https://github.com/montoyamoraga/tiny-trainable-instruments, created by Aarón Montoya-Moraga, a research assistant at MIT Media Lab's Opera of the Future and Future Sketches research groups.

This library is being written between December 2020 and August 2021, with help from undergrad researchers Peter Tone and Maxwell Wang.

Distribution

This Arduino library is available on this repository https://github.com/montoyamoraga/TinyTrainable, and can also be installed on the Arduino IDE.

Dependencies

The dependencies of this library are specified on the library.properties file, which include:

- Adafruit GFX Library: for output with screen.
- Adafruit SSD1306: for output with screen.
- Adafruit Thermal Printer Library: for outputs with Adafruit Thermal Printer.
- Arduino_APDS9960: APDS9960 sensor, to read gestures, color, proximity.
- Arduino_KNN: for machine learning with K-Nearest Neighbors algorithm.
- Arduino_LSM9DS1: LSM9DS1 IMU sensor, to read accelerometer, magnetometer, gyroscope.
- Arduino_TensorFlowLite: for machine learning with TensorFlow.
- Servo: output with servo motors.

Branches

- main: the source code and examples.
- gh-pages: documentation generated with Doxygen, also available at https://montoyamoraga.github.io/TinyTrainable.

Hardware

This library is intended to be used with the microcontroller Arduino Nano 33 BLE Sense, and the bill of materials available at https://github.com/montoyamoraga/tiny-trainable-instruments/blob/main/docs/0-bill-of-materials.md

Releases

- v0.0.1: 2020 December 07, placeholder alpha release, for testing the Arduino library ecosystem.
- v0.1.0: 2021 January 12, alpha release with first draft versions of each class, and some examples.
- v0.2.0: in progress.

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