tiny-trainable-instruments

About

Tiny Trainable Instruments is a collection of media arts instruments using tiny machine learning, and based on microcontrollers.

Tiny Trainable Instruments is the master's thesis of Aarón Montoya-Moraga, a graduate student at MIT Media Lab and research assistant of the research groups Opera of the Future and Future Sketches, during the academic years 2019-2021.

The advisor of this thesis project is Tod Machover, and the thesis readers are Zach Lieberman and Mitchel Resnick.

This thesis project features contributions by UROP undergrad researchers Peter Tone and Maxwell Wang.

Structure

This repository contains the following folders and files:

- assets/: graphic assets.
- databases/: databases for gesture and speech.
- docs/: Markdown files, image files, and PDF files for documentation, including workshop materials.
- notebooks/: Python Jupyter notebooks for processing databases and training models.
- scripts/: shell scripts.
- thesis/: Markdown files, image files, PDF files for thesis document.
- TinyTrainable/): the Arduino software library built for this thesis. IT is included here as a submodule, and the most up-to-date version is on its own standalone repository at https://github.com/montoyamoraga/TinyTrainable.
- .gitignore: Git file for ignoring.
- .gitmodules: Git file for submodules.
- .python-version: file for Python module pyenv.
- LICENSE: text file with the license.
- README.md: README file written in Markdown.
- README.pdf: README exported to PDF.
- requirements.txt: file to install all necessary Python modules.

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