**Aubio**

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Phase\_1 : WLED Audio Reactive LED Strip

Link : <https://github.com/Aircoookie/audio-reactive-led-strip>

Fork git

* Python visualization code, which includes code for:
  + Recording audio with a microphone ([microphone.py](https://github.com/Aircoookie/audio-reactive-led-strip/blob/master/python/microphone.py))
  + Digital signal processing ([dsp.py](https://github.com/Aircoookie/audio-reactive-led-strip/blob/master/python/dsp.py))
  + Constructing 1D visualizations ([visualization.py](https://github.com/Aircoookie/audio-reactive-led-strip/blob/master/python/visualization.py))
  + Sending pixel information to the ESP8266 over WiFi ([led.py](https://github.com/Aircoookie/audio-reactive-led-strip/blob/master/python/led.py))
  + Configuration and settings ([config.py](https://github.com/Aircoookie/audio-reactive-led-strip/blob/master/python/config.py))
* Arduino firmware for the ESP8266 ([ws2812\_controller.ino](https://github.com/Aircoookie/audio-reactive-led-strip/blob/master/arduino/ws2812_controller/ws2812_controller.ino))

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To build a visualizer using a computer and ESP8266, you will need:

* Computer with Python 2.7 or 3.5 ([Anaconda](https://www.continuum.io/downloads) is recommended on Windows)
* ESP8266 module with RX1 pin exposed. These modules can be purchased for as little as $5 USD. These modules are known to be compatible, but many others will work too:
  + NodeMCU v3
  + Adafruit HUZZAH
  + Adafruit Feather HUZZAH
* WS2812B LED strip (such as Adafruit Neopixels). These can be purchased for as little as $5-15 USD per meter.
* 5V power supply
* 3.3V-5V level shifter (optional, must be non-inverting)

Limitations when using a computer + ESP8266:

* The communication protocol between the computer and ESP8266 currently supports a maximum of 256 LEDs.

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Installation

First install Acadonda

Make sure its 64 bit

Add it to path

(do not install a separate python as anaconda has ist own python and the too will crash)

Also install (important windows compiler)

<https://wiki.python.org/moin/WindowsCompilers>

**Installing dependencies with Anaconda**

Create a [conda virtual environment](http://conda.pydata.org/docs/using/envs.html) (this step is optional but recommended)

conda create --name visualization-env python=3.5

activate visualization-env

Install dependencies using pip and the conda package manager

conda install numpy scipy pyqtgraph

pip install pyaudio

**Installing dependencies without Anaconda**

The pip package manager can also be used to install the python dependencies.

pip install numpy

pip install scipy

pip install pyqtgraph

pip install pyaudio

If pip is not found try using python -m pip install instead.

The last part if installing pyaudio has errors try this

pip install pipwin

pipwin install pyaudio

LEDFX aubio bug

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conda config --add channels conda-forge

$ conda install -c conda-forge aubio

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https://anaconda.org/conda-forge/aubio

This allowed me to install successfully.

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hi [**@Rybak5611**](https://github.com/Rybak5611)

as mentioned above, you *must* have [a compiler](https://wiki.python.org/moin/WindowsCompilers) installed to build aubio's python module.

if you do not want to install a compiler, you can use [conda packages](https://anaconda.org/conda-forge/aubio).

let us know how it goes,  
best, piem

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Hi [**@Rybak5611**](https://github.com/Rybak5611)

Thanks for the feedback.

The [python wiki](https://wiki.python.org/moin/WindowsCompilers#Which_Microsoft_Visual_C.2B-.2B-_compiler_to_use_with_a_specific_Python_version_.3F) mentions *you need to install the compiler version that corresponds to your Python version*. This is also specified in the official documentation on [building extensions C and C++ on windows](https://docs.python.org/3.7/extending/windows.html): *You will still need the C compiler that was used to build Python; typically Microsoft Visual C++*.

So we need to figure out:

* what version of python is being used?
* what compiler corresponds to that version of python?
* if/once installed, why is that compiler not found by distutils?

For the last step, the [windows build logs](https://ci.appveyor.com/project/piem/aubio) might give you some hints. Note installing wheel and upgrading pip and setuptools was required there. Something like this should do:

python.exe -m pip install --upgrade pip setuptools wheel

If that doesn't help, you could try building a simple C extension (aubio is not the simplest because the pre-processor is used in a first step to generate some of the C files).

Let us know how it goes!

thanks, piem