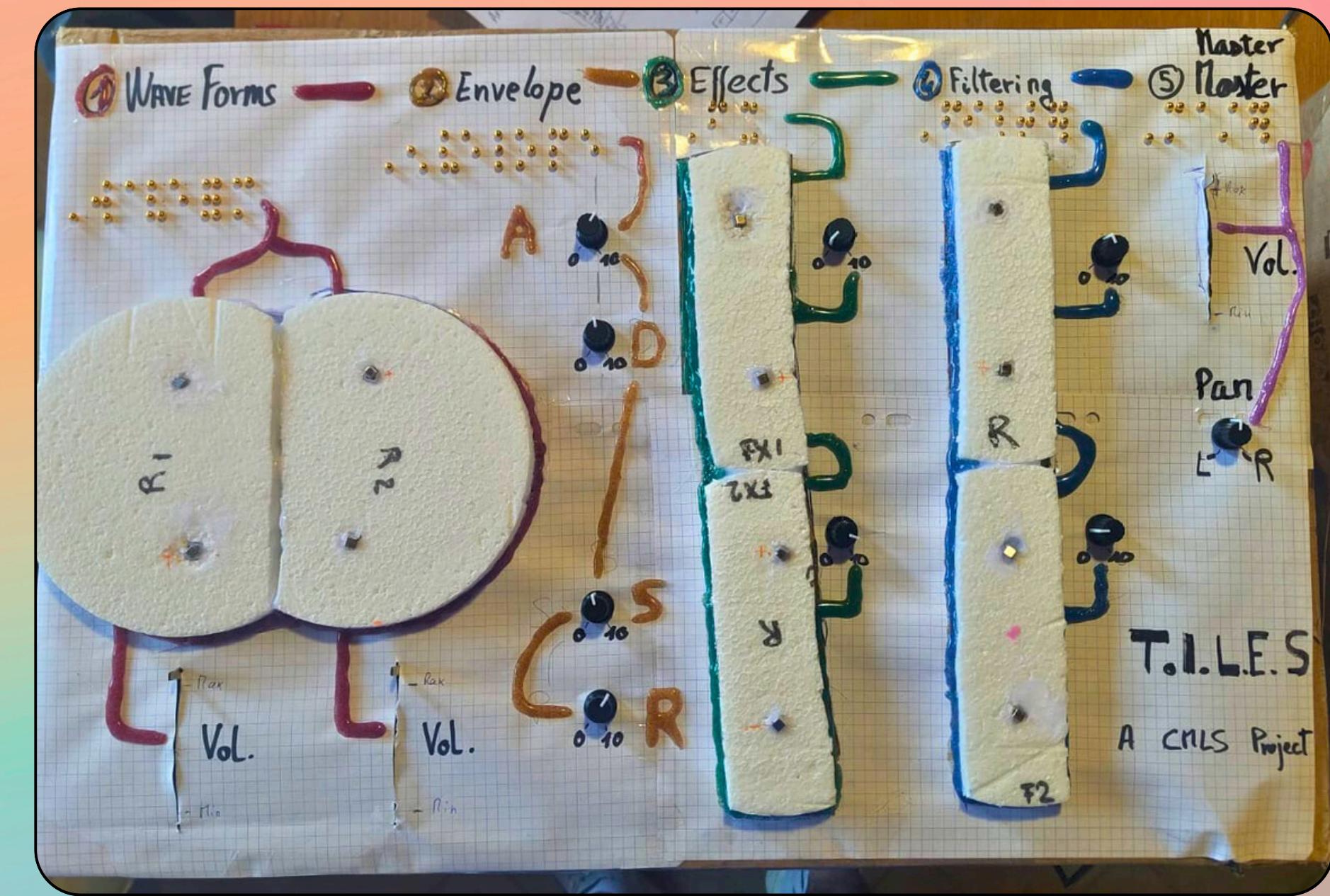
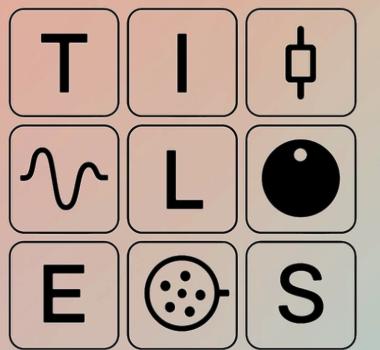


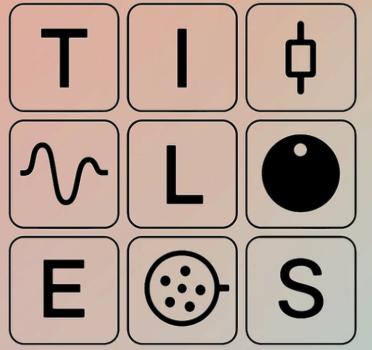
1

TILES ✨

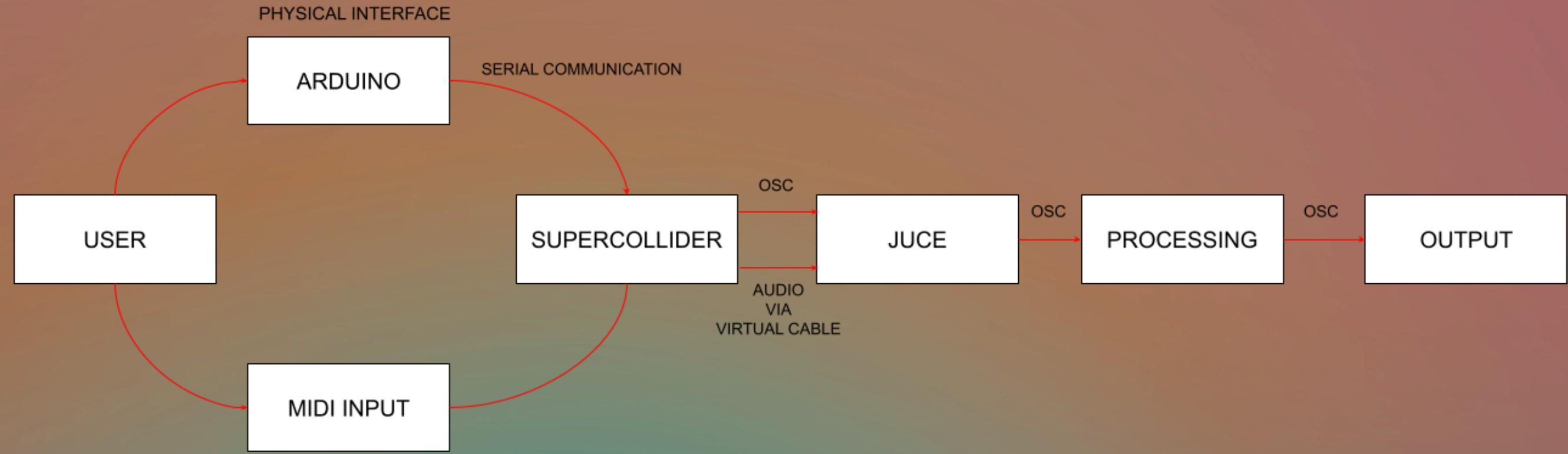


Tangible Interface For Live Electronic Sound

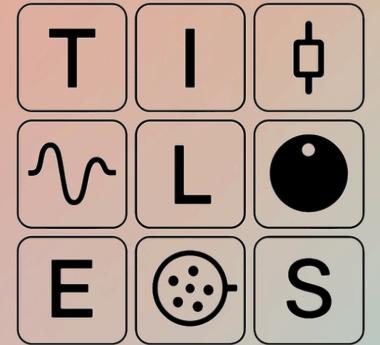
2



COMMUNICATION LAYOUT



3



TILES: AN ACCESSIBLE SYNTH

TILES is designed to provide an easy and accessible synthesis interface, allowing anyone to experiment with sound generation through a subtractive synthesis framework. It enables users to interactively understand how each component affects the sound.

① Wave Forms



② Envelope



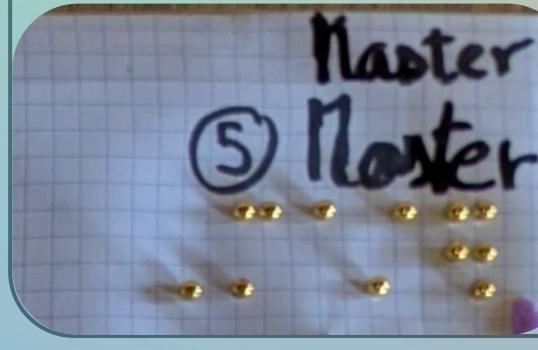
③ Effects



④ Filtering



Master
Master



4

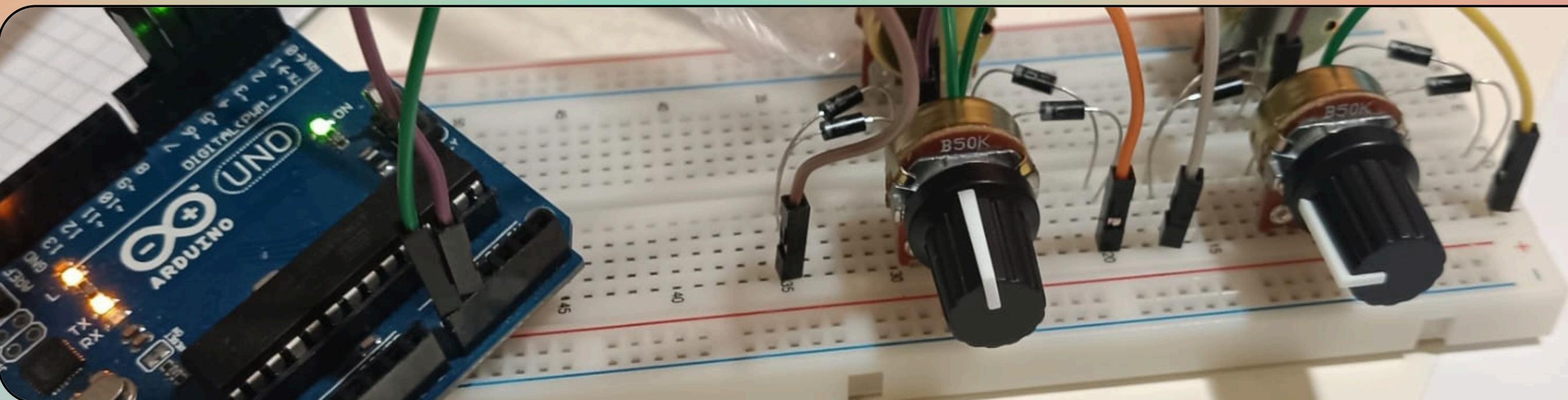


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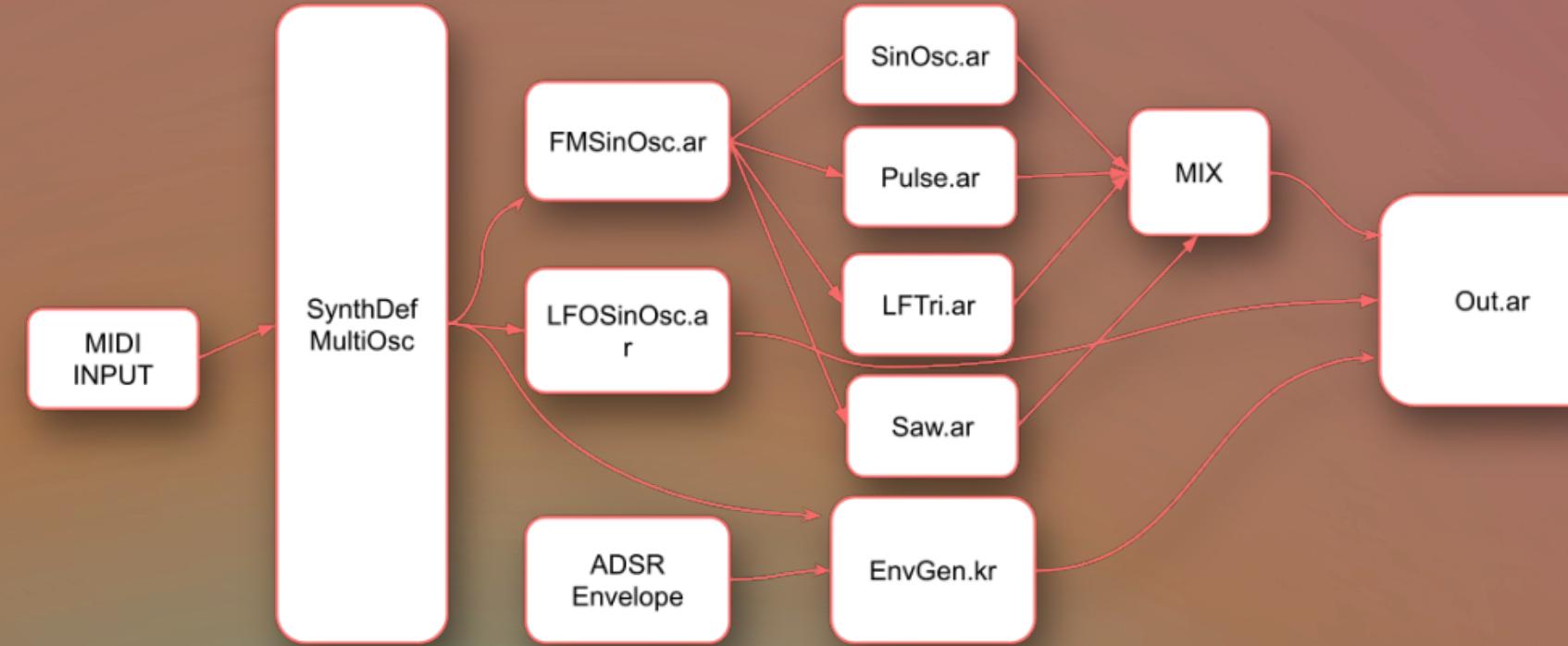
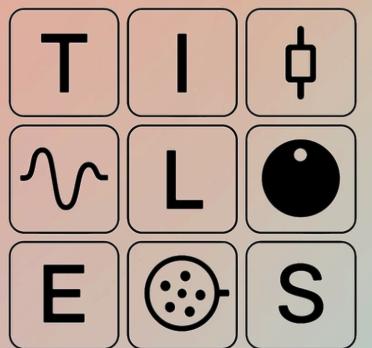
EVERYTHING STARTS WITH AN ARDUINO



The control interface is connected to an arduino that sequentially reads the inputs, organize them and send them to Superollider for the sound synthesis. To provide a more interactive experience oscillators, effects and filters are physically attached by the user to the interface via magnetic connections



5

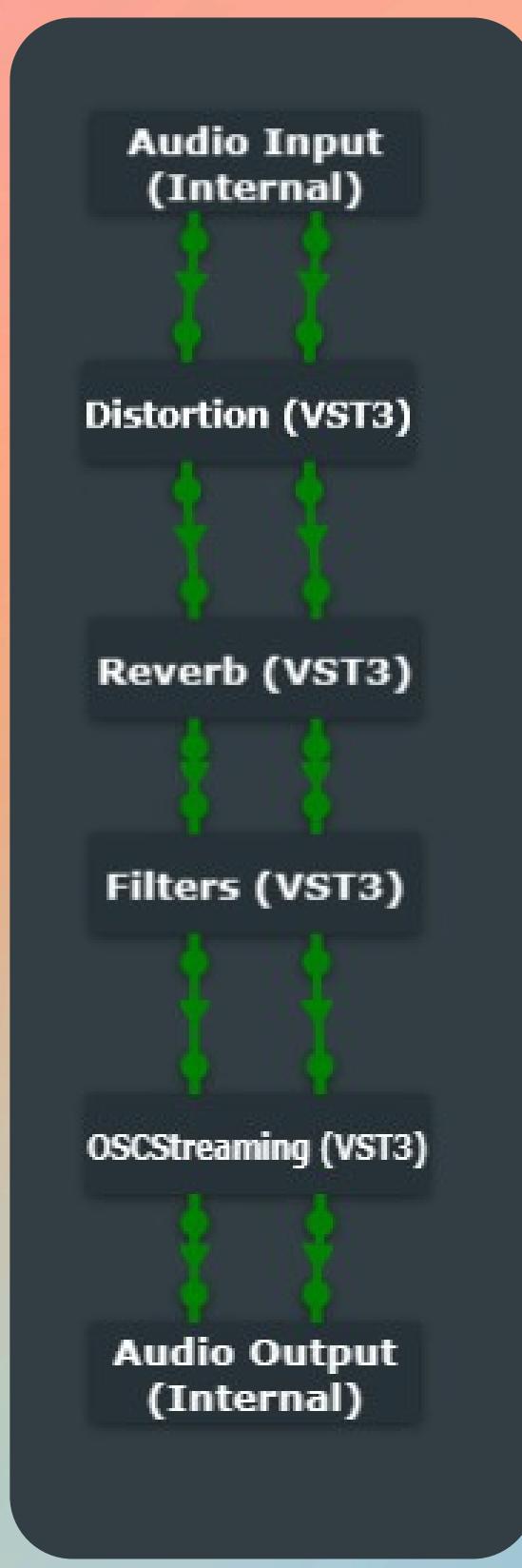
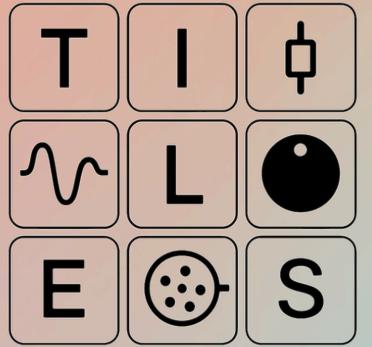


SUPERCOLLIDER: THE HEARTH OF THE SOUND



After the parameters are read by the Arduino they are passed to supercollider that uses them to generate the basic waveforms with the desired shape and ADSR envelope, apply the LFO effect, mix the oscillators and finally sending the audio to JUCE via virtual cable where more effects can be applied

6

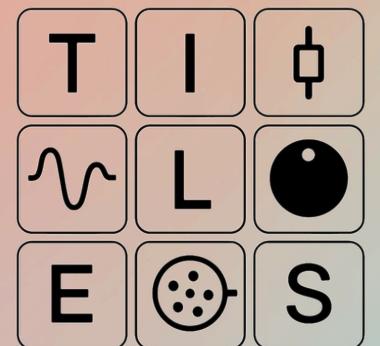


JUCE IT UP WITH EFFECTS!

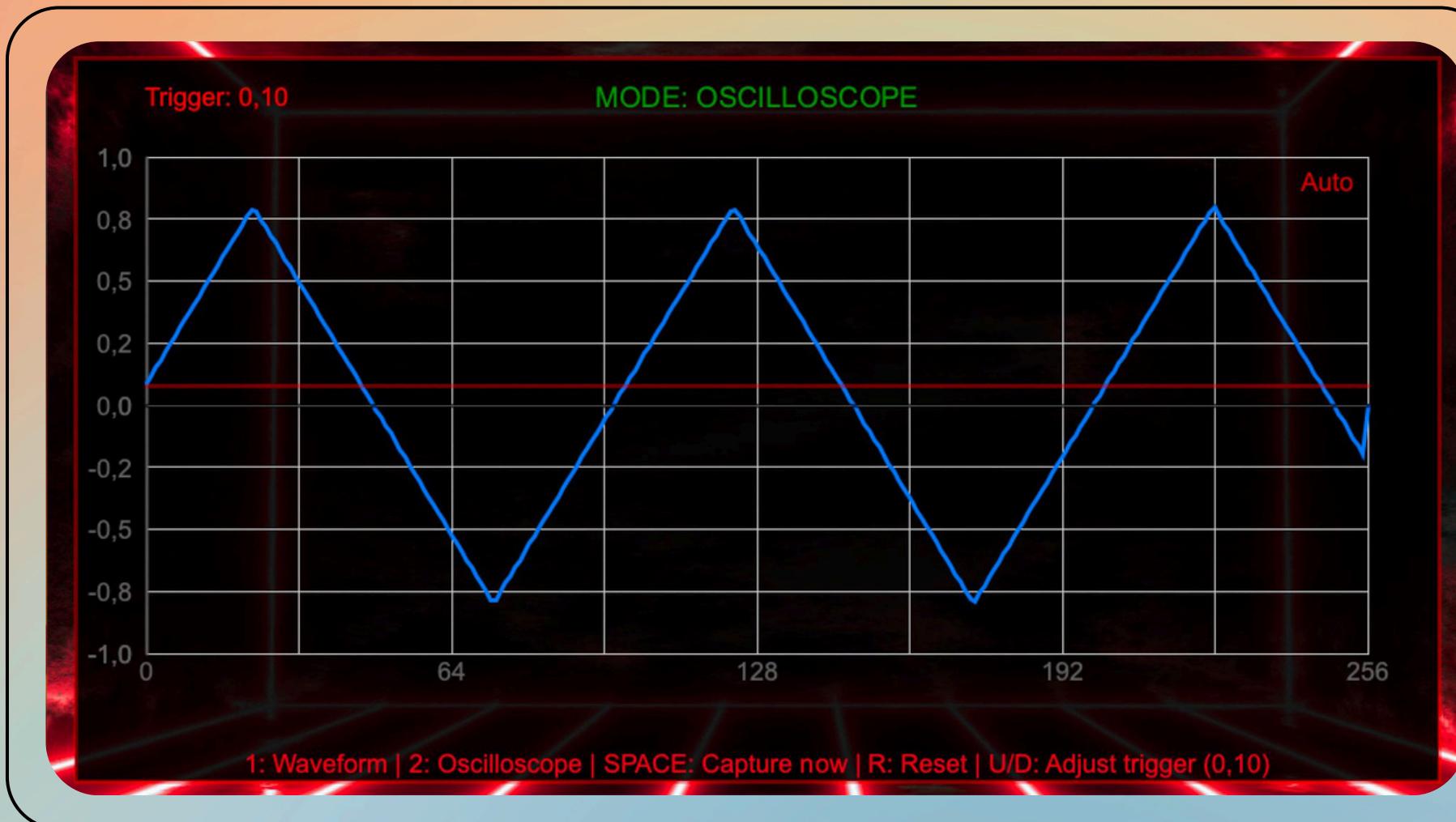


The sound output from SuperCollider is sent to JUCE via virtual cable, here the user can apply effects on the sound such as reverb and hard clipping distortion as well as different filters with variable cutoff. The effects are developed as VST3 plugins and put in series inside the plugin host, in this way is possible to rearrange the effect chain as desired

7



YOU MIGHT NEED SOME HELP PROCESSING...

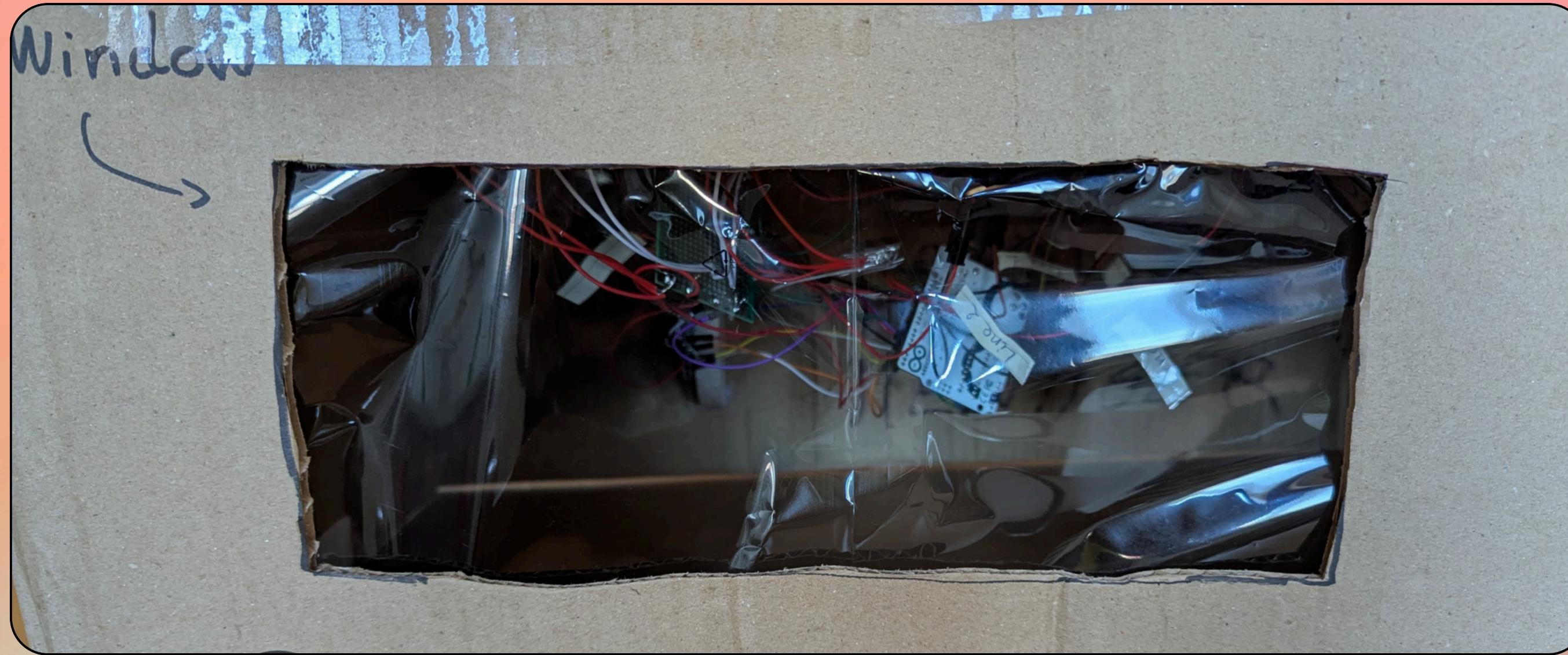
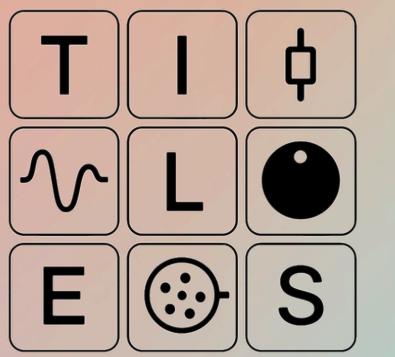


To better visualize the audio signal and support those who can't hear it, we designed a wave visualizer interface using Processing.

The waveform is sent via OSC from JUCE, stored in a circular buffer, and displayed to the user in two modes: Waveform and Oscilloscope.

We also added a Synthwave perspective grid because everything looks better with a bit of 80s aesthetic.

8



THANK YOU AND HAVE FUN WITH TILES!