Pete Repeater

A Novel Physical Interface For Audio Loops

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Goals and Audience

To create an alternative experience for using audio looping. Built for children, coveted by adults.

Children ages 6 - 12, engaged in tactile, mind-exploration with looping sounds. Adults looking to abandon over-tooled instrument accessories.

Description of Process

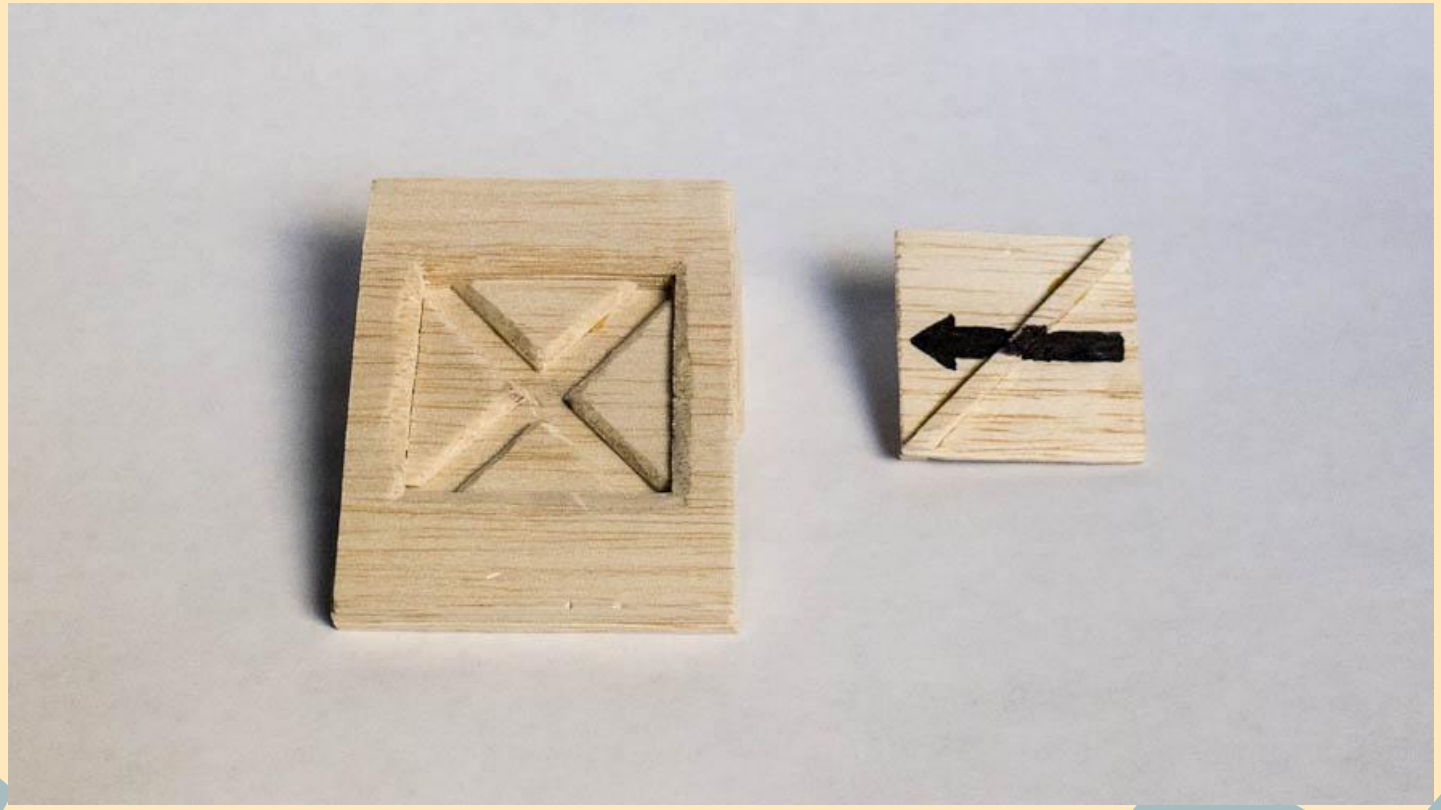
A looper is a device that records audio input and plays it back on a repeating loop.

When the tile is placed onto the base, Ableton is triggered via MIDI to begin recording audio. With the tile oriented one way, the audio plays back as recorded. When oriented the other way, the audio plays back in reverse.

While the tile is removed, audio is not playing back or recording.

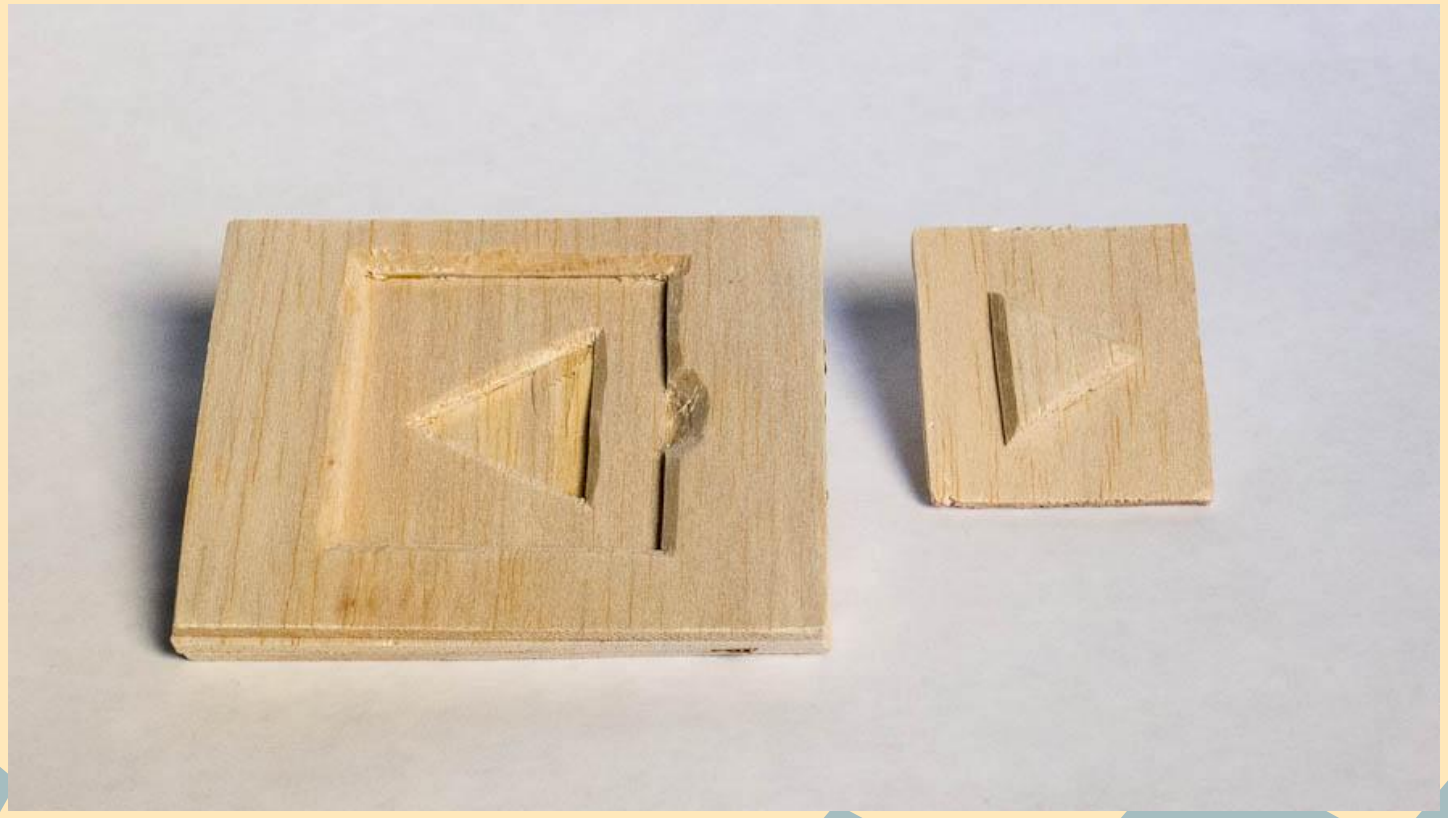
Prototype #1

Balsa X



Prototype #2

Balsa Arrow

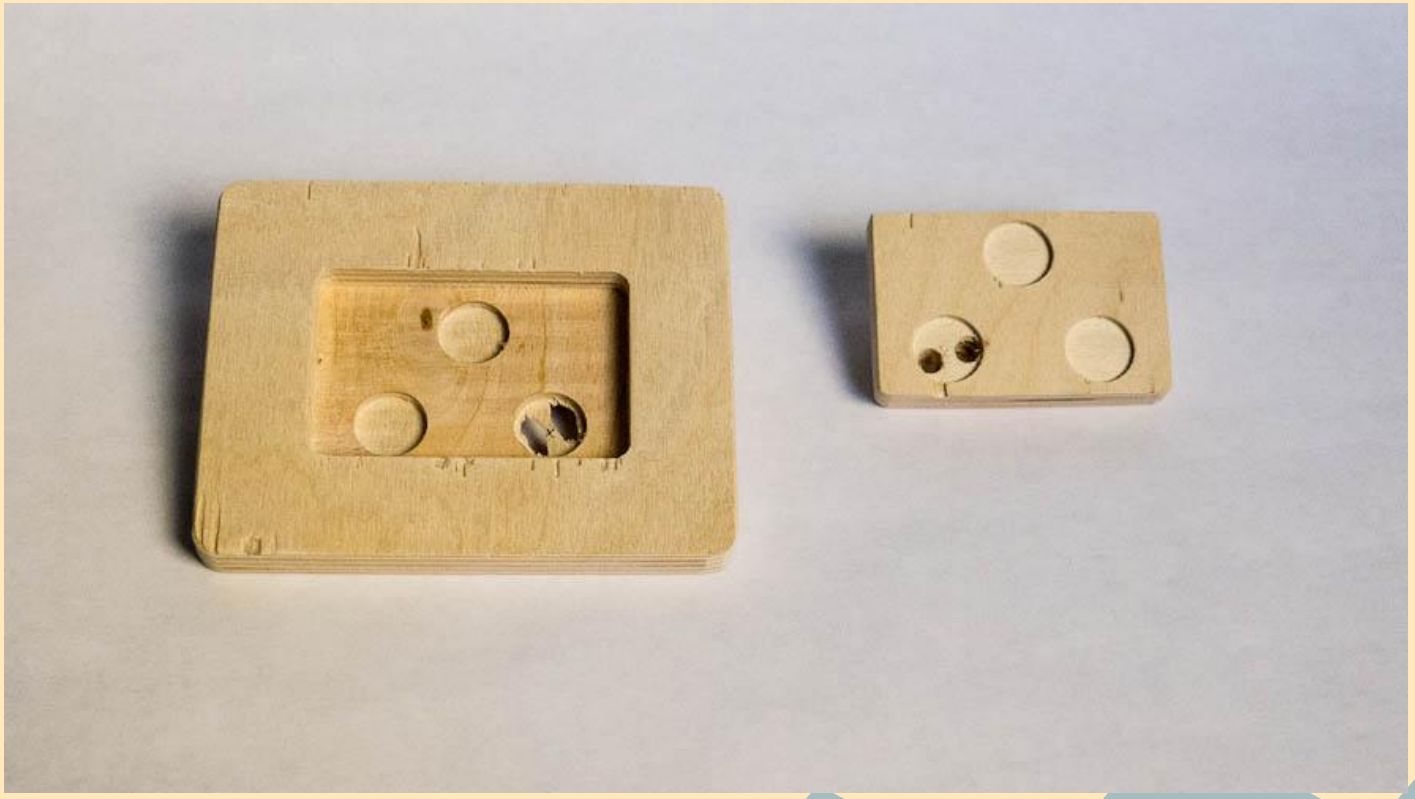


Prototype #3

Hand Router

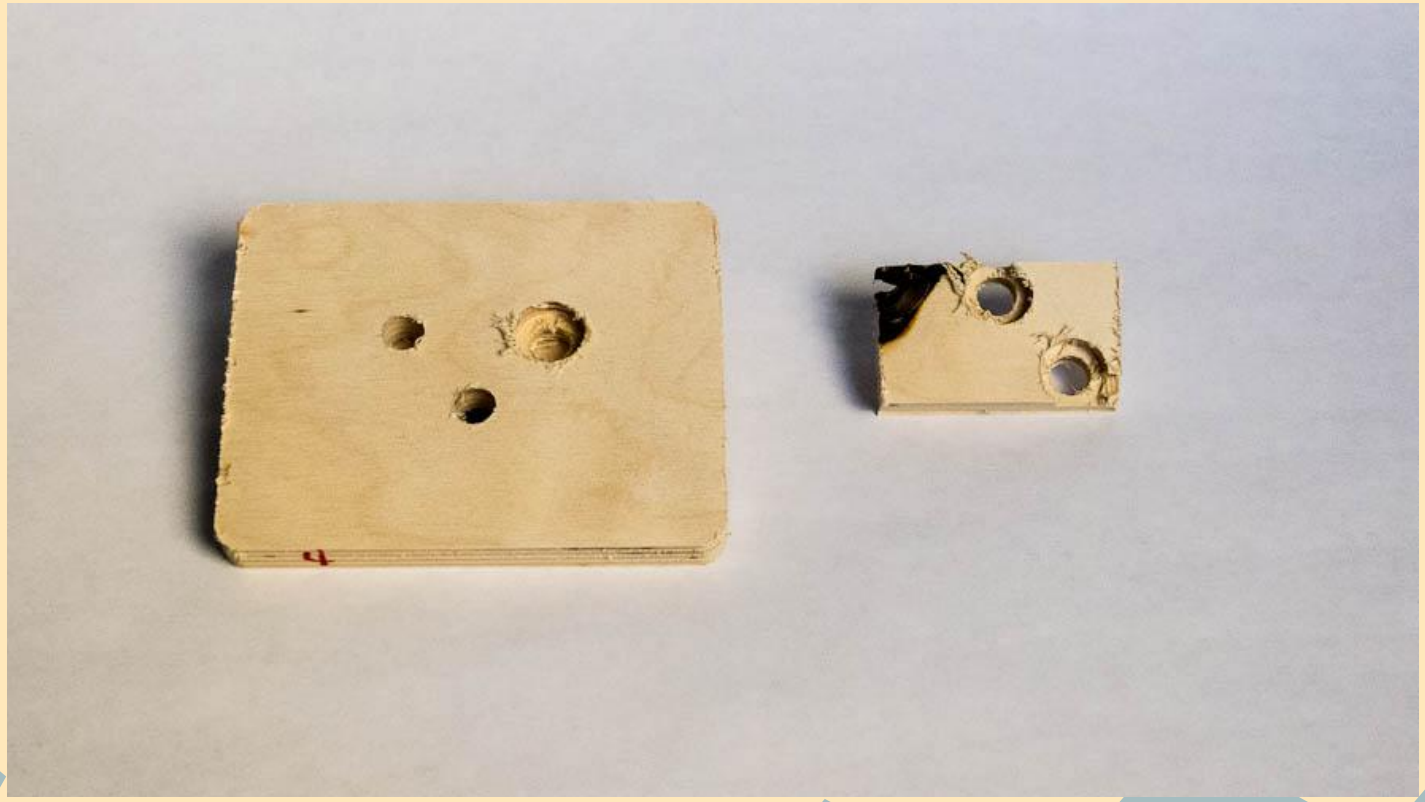
Prototype #4

CNC Router Version 1



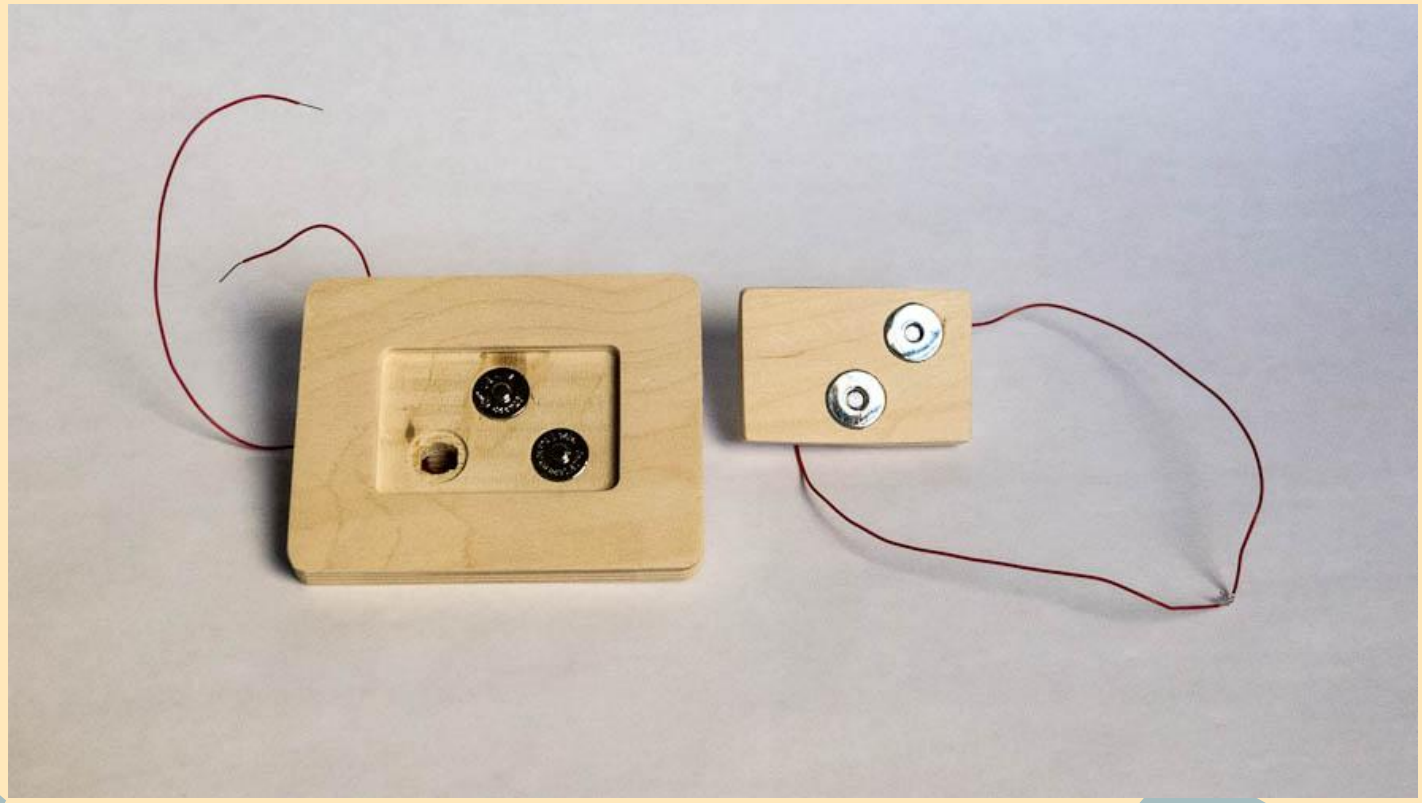
Prototype #5

CNC Router Version 2



Prototype #6

CNC Router Version 3



New Arduino Libraries

Two Arduino libraries were created for this project.

SuperSensor:

Sensor reading with moving average baked-right-in!

Transport:

Generic Audio/Sequencer Transport for Arduino

http://www.karlward.com/blog/2012/12/midi-supersensor-and-transport/

```
#ifndef SuperSensor_h
#define SuperSensor_h

#include "Arduino.h"

class SuperSensor {
  public:
    SuperSensor(int pin);
    int read();
    int mean();
  private:
    int _pin;
    int _value;
    int _mean;
    int _values_count;
    int _values[10];
    void _update();
    int _mean_values();
};

#endif
```

Overcome Challenges

- Drilling the hole in mag snaps
- Soldering to mag snaps
- CNC router order of operations
- CNC router inside vs. outside
- MIDI usage in general
- Pinout/wiring for MIDI connector

Another Real Challenge

That guy's haircut and beard at Radio Shack, for real. See: See: Magneto

Live Recorded Demo

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