TUSIC

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shoutkey.com/queasy

Our Goal

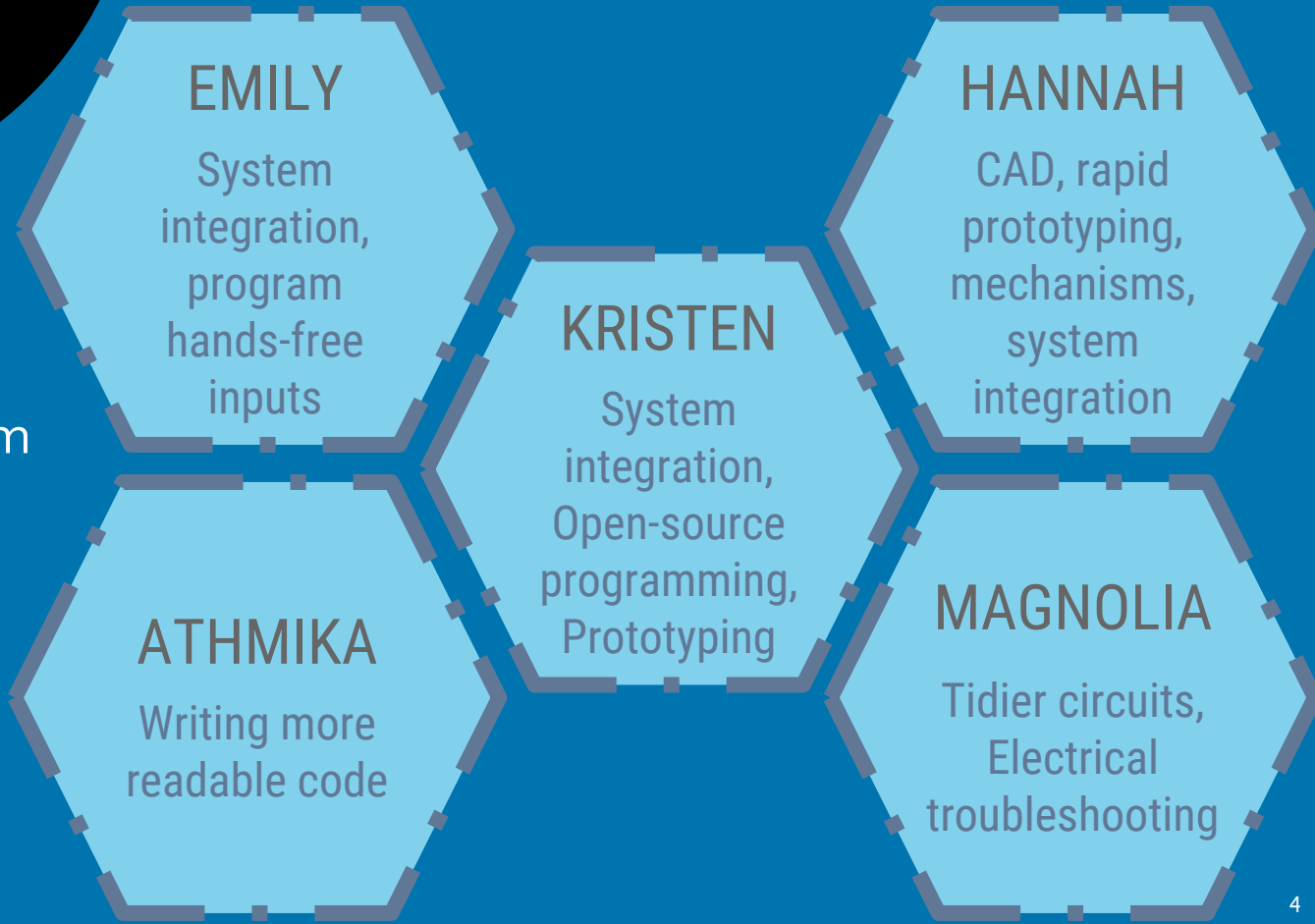
A PAGE TURNER for musicians that is actuated with a HANDS-FREE method.

OUR MVP

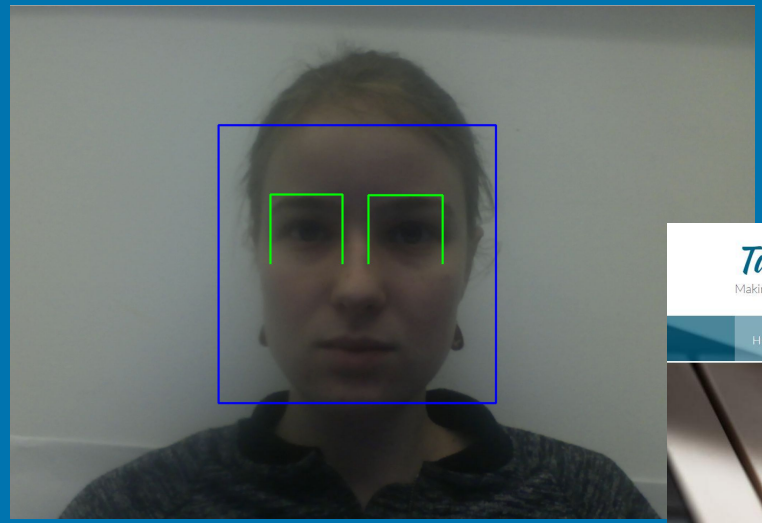
1	2	3	4	5
Can reliably turn sheet music in a binder format	Hands-free trigger mechanism	Professional Construction	User testing with pianists	Integrated systems

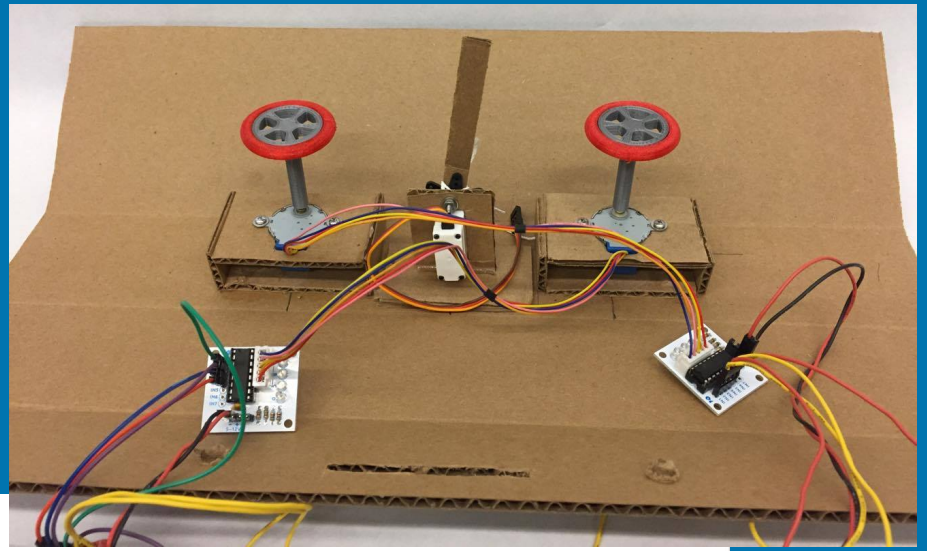
LEARNING GOALS

Our individual goals. How have we met them thus far?



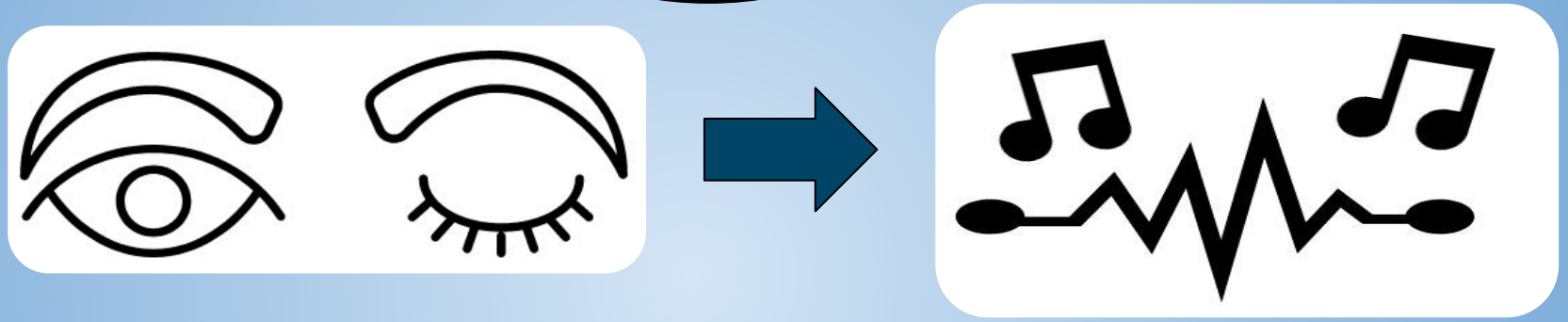
Sprint 1 Deliverables



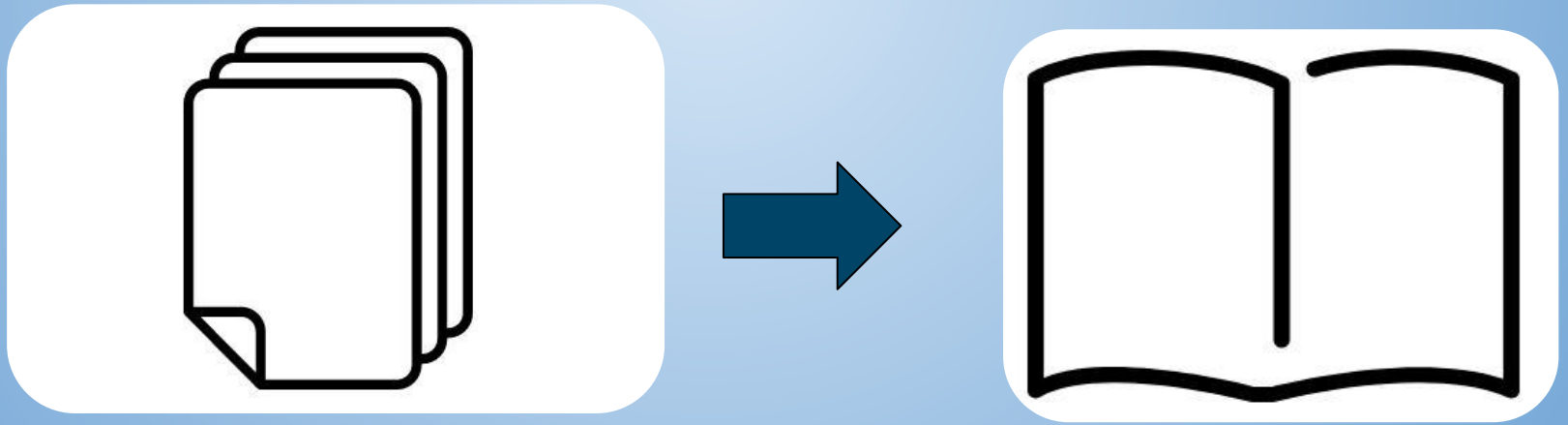


Sprint 1 Takeaways

SOFTWARE

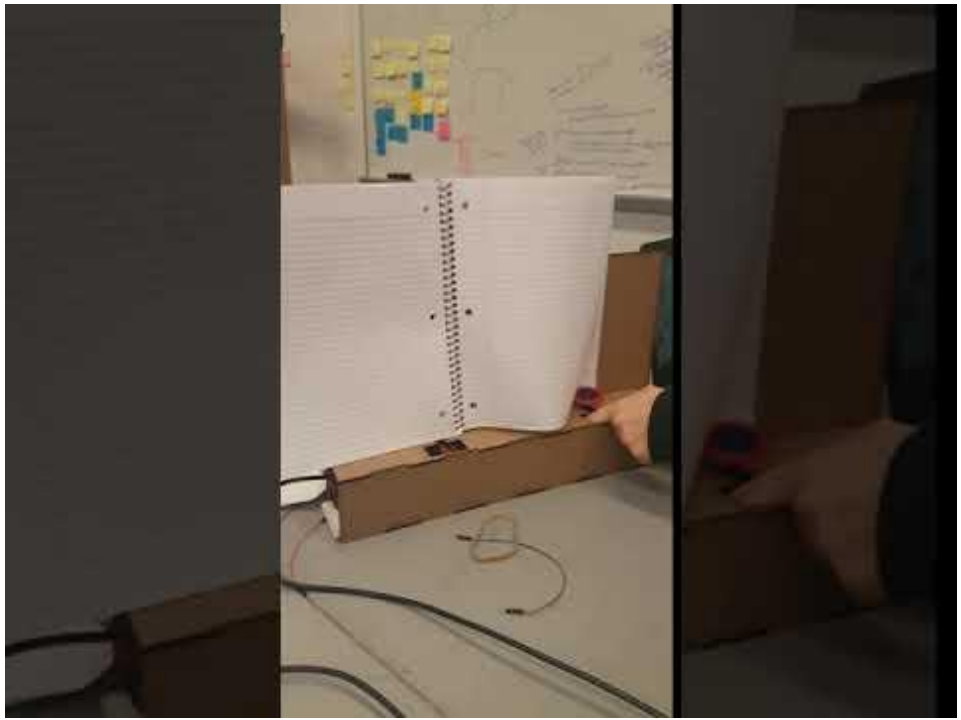


MECHANICAL



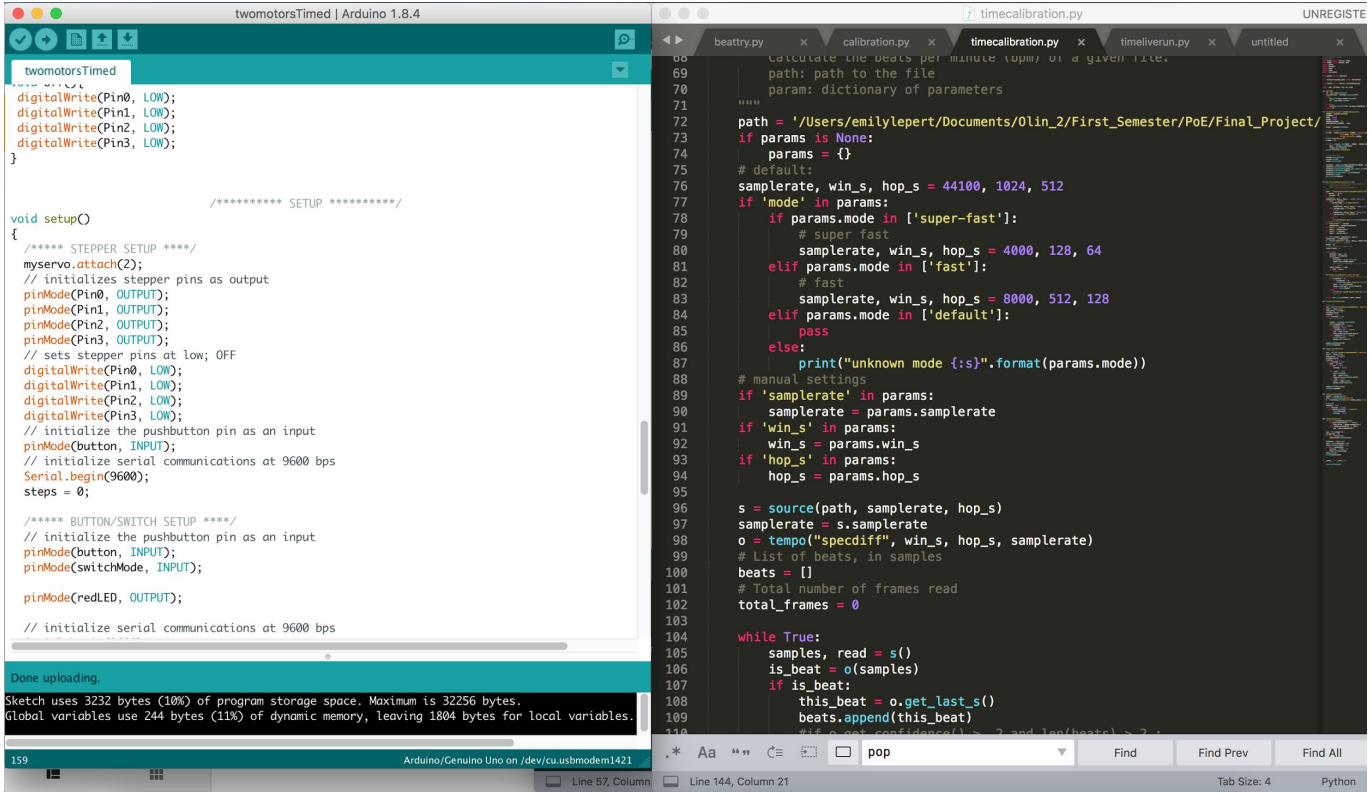
Deliverable 1

Moving one piece of paper



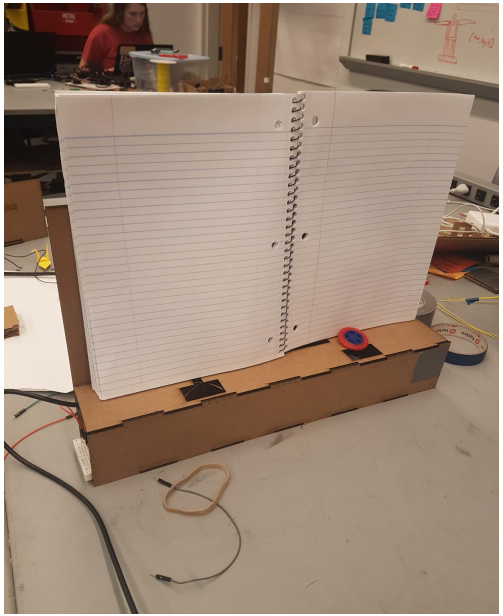
Deliverable 2

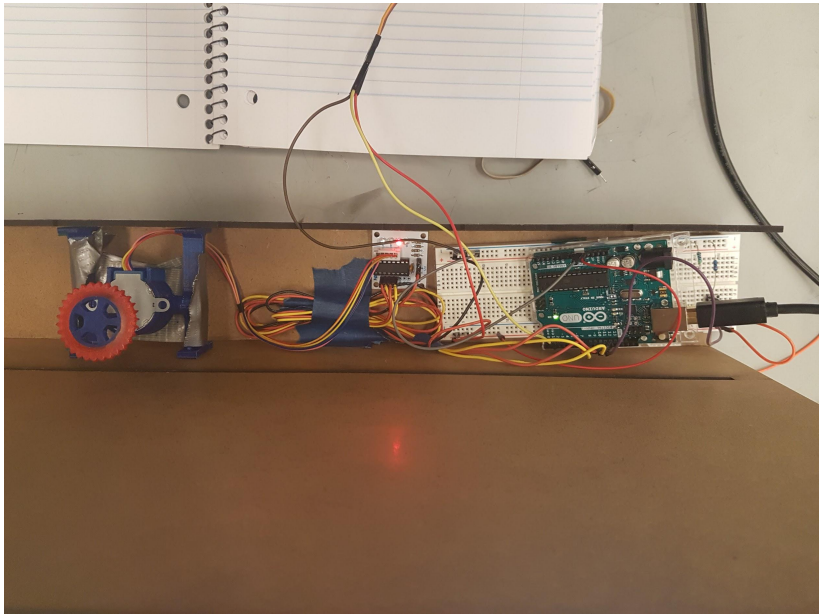
Beat Detection

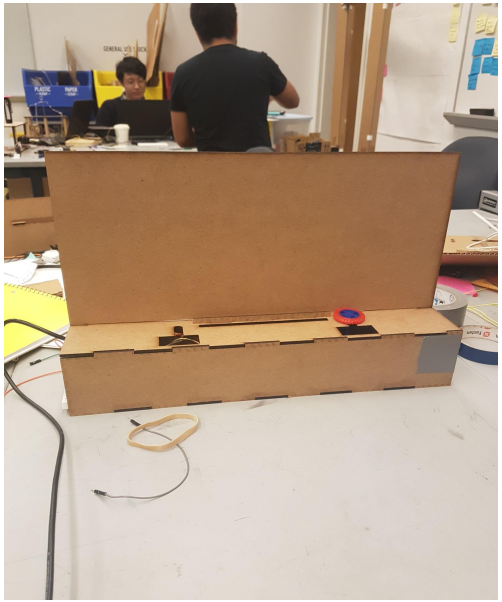


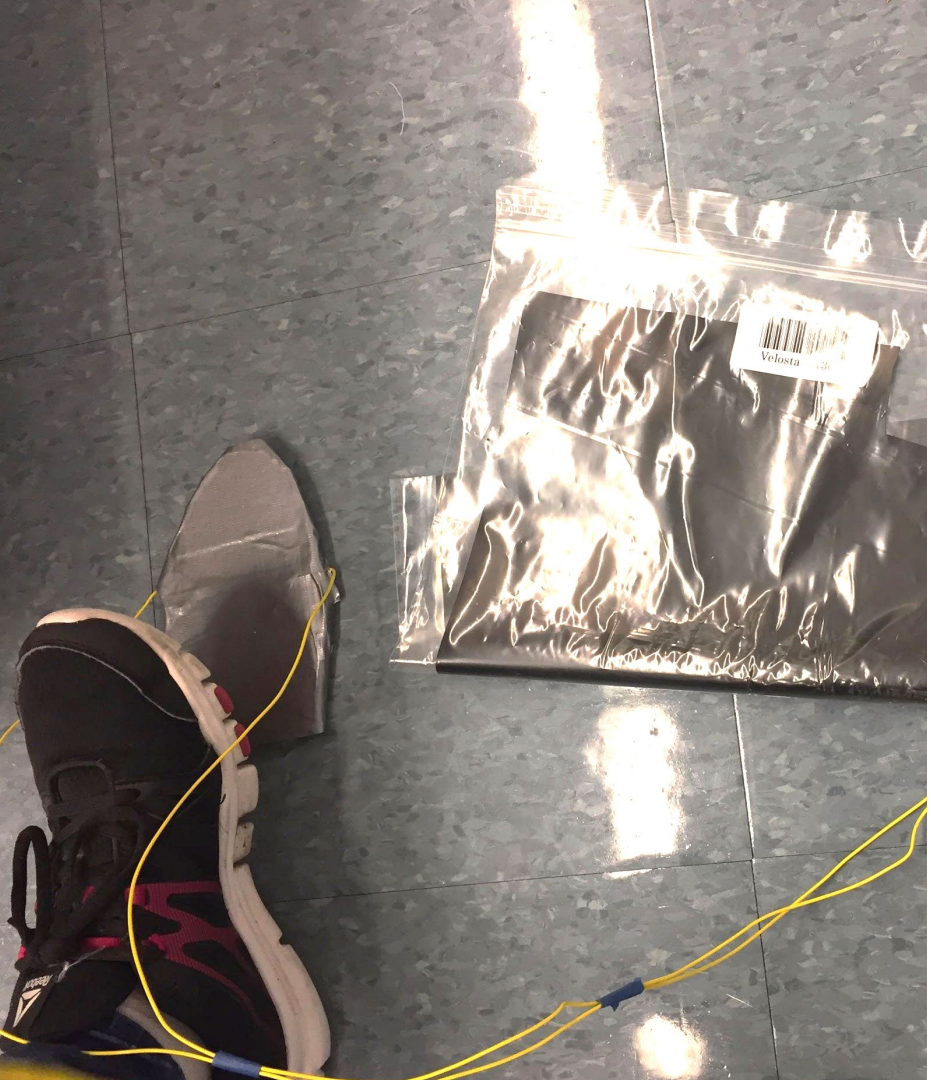
Deliverable 3

Integrate Beat Detection with motors









Deliverable 4

First-cut pedal using pressure sensing paper

Deliverable 5

Continued blogging and updates

Week4/Sprint 2 Recap:

We spent more time this work working on creating a box that would be able to hold all our motors and circuitry. This proved to be pretty difficult since we are using 5 our design and two of the five need to rotate in and out of the plant. Our code to run t motors was acting up, so instead of using a library like we've been doing, we instead code which powers the coils of our stepper in the specific sequence needed to make going in a counterclockwise manner. Our steppers ran a lot more smoothly, but, as a not making this switch sooner, we need to redo our calibrations. We also received ou Velostat, a material that is electrically conductive whose resistance is inversely propo the force applied to it. We sandwiched a sheet between two pieces of cardboard with tape taped on, in order to create our pedal prototype.

Week 3 Recap:

Hardware and mechanically this week was spent evaluating our motors. We t Stan about the pros and cons of different stepper motors and DC motors. The steppe we were using for our prototype turn pages well, but slowly. As such, we decided t

turning as the biggest risk, our next spring goals did not refle those goals with the biggest risk to tackle those head on.

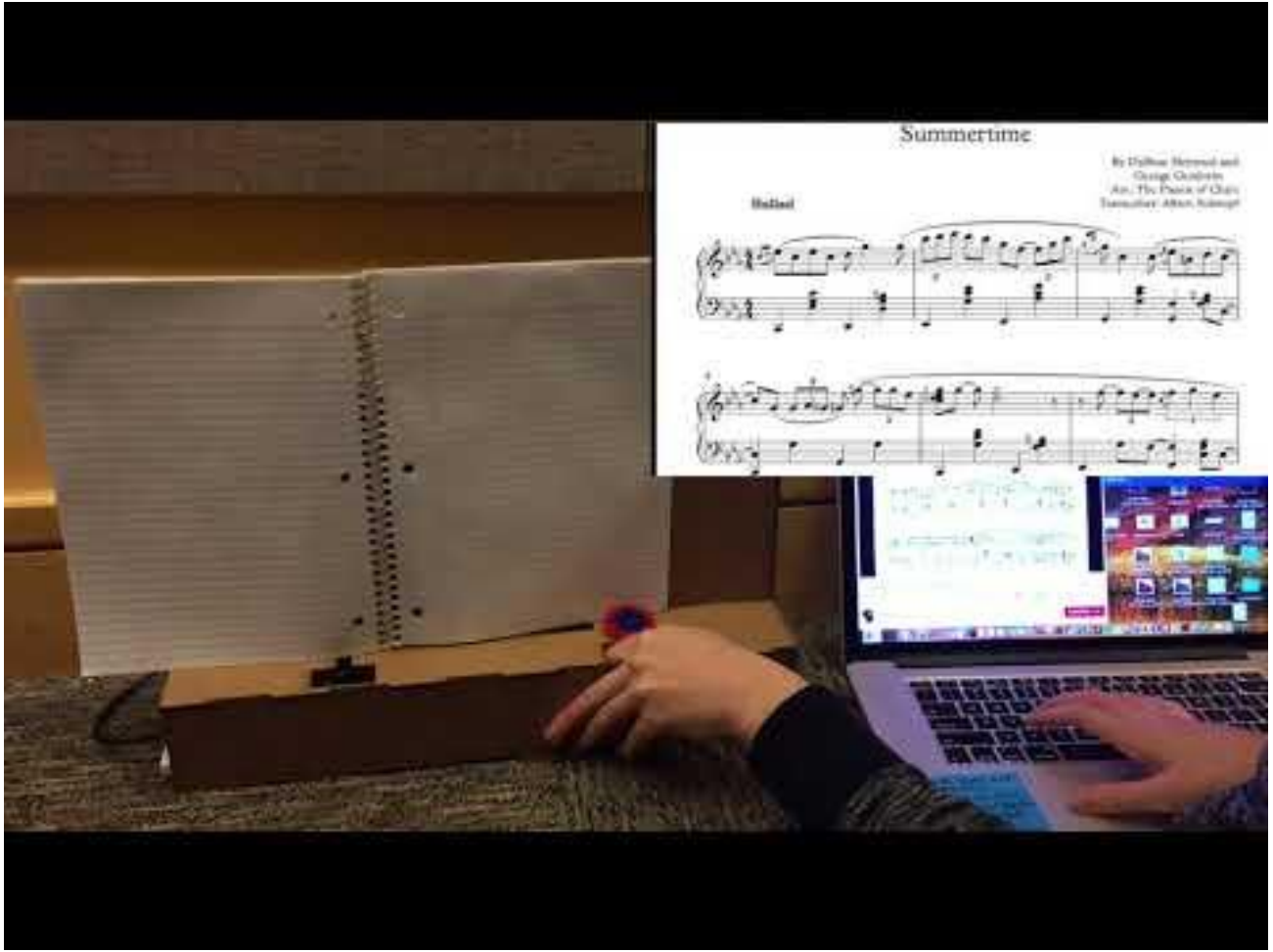
[Attached slides]

Sprint 1 Recap:

Our first sprint consisted of us ideating on a project and coming up with initial prototypes. On the mechanical side we were inspired by examples from YouTube and decided to use a system of wheels to slide pages across the music stand. We created a sketch model with stepper motors. By the end of the sprint the motors turned individually but not very fast at the same time. On the hardware side, we integrated an Arduino and button into the mechanical design to trigger the motors.

On the software side, we spent much of the sprint investigating and researching different hands free inputs into the system. We decided to prototype blink detection using Python and

Demo



BIGGEST RISKS

Turning accuracy

Beat detection accuracy

3rd SPRINT GOALS

Mechanical

- Implement servo swiper
- Include springs to push motors
- Test/calibrate turning accuracy
- Have reverse functionality

Software

- More testing of beat detection code
- Investigate other possible libraries

Electrical

- Make pedal input instead of button/keyboard input

Documentation

- Get website live
- Continue blogging