Shiverbot

From to

Team Guobotics
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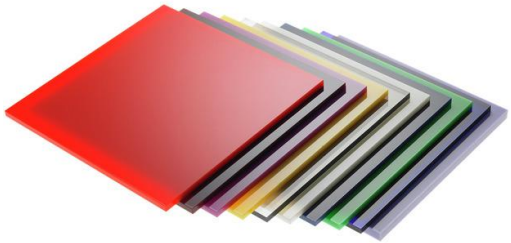
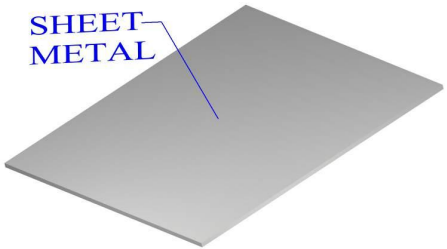
Final Design

Concept

- Acrylic + sheet metal





Final Design

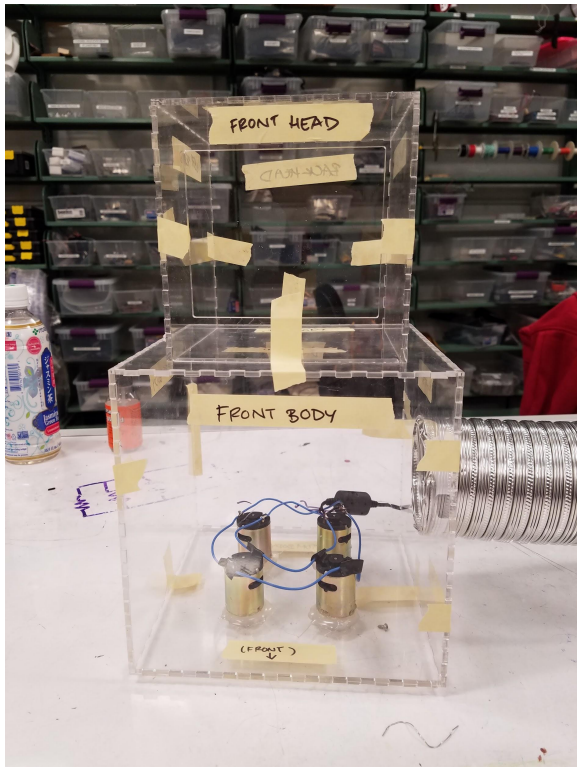
Expressions

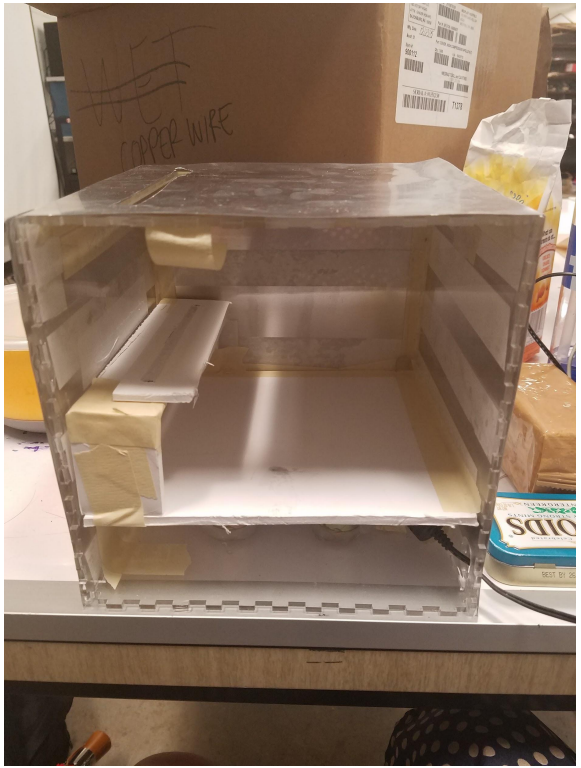
Default Face

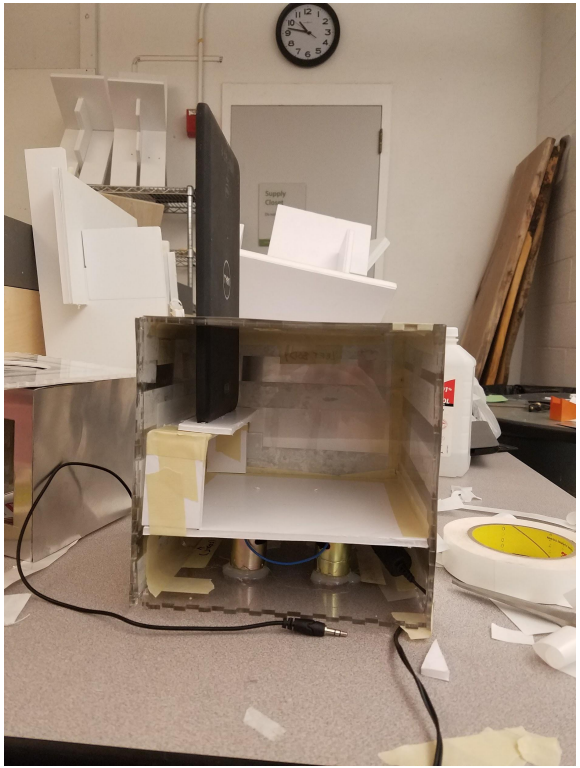
Talking

After Someone Cranks

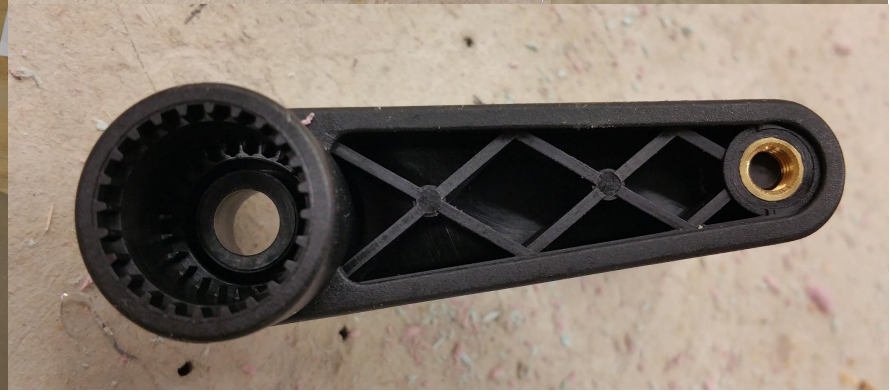
Shell





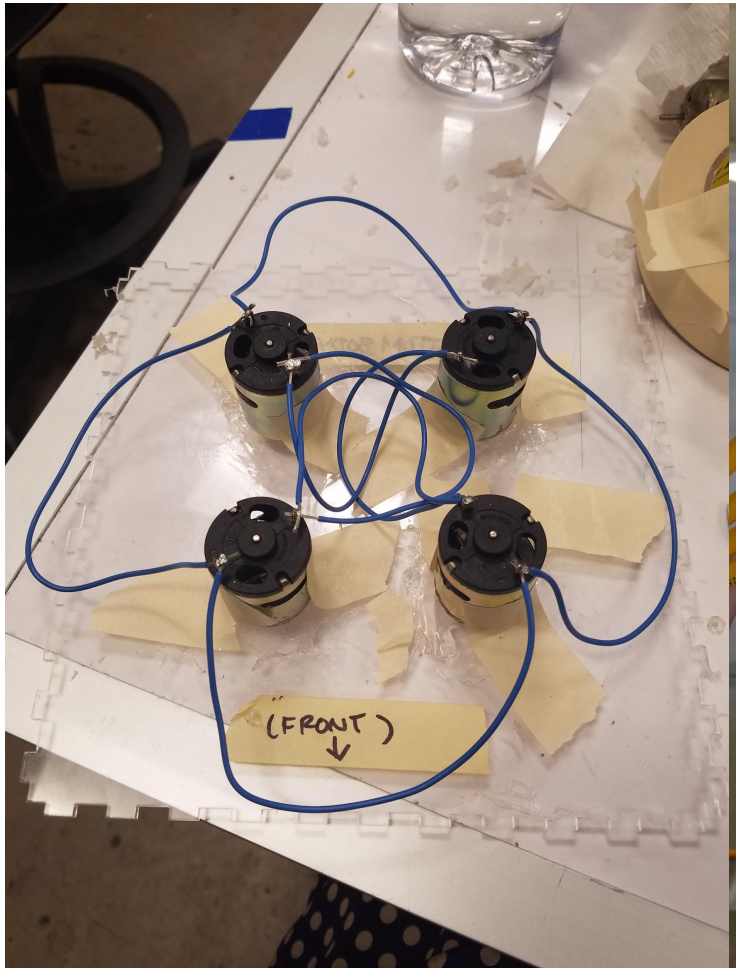


Crank



Tried 3 Types of Cranks
1. Easy
2. Medium
3. Hard

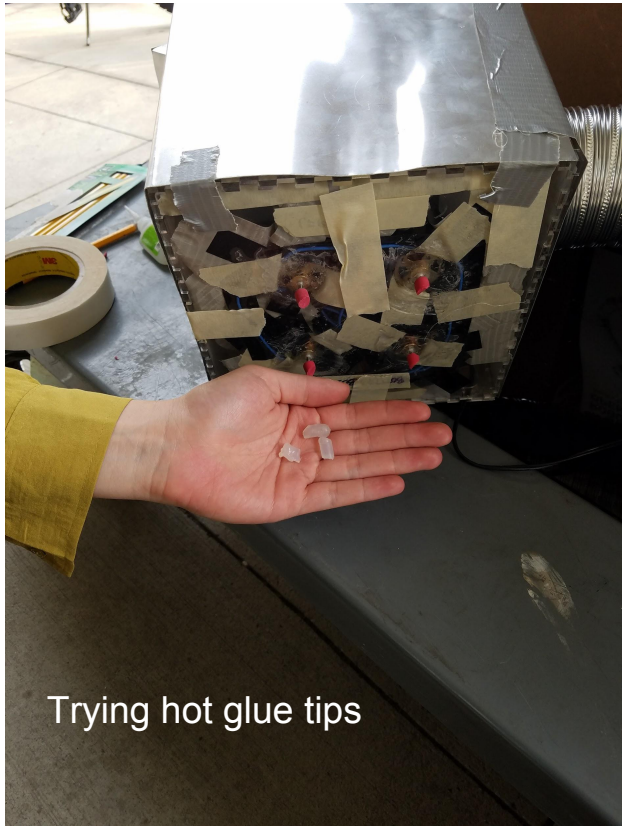
Motor

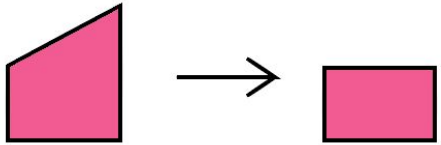


IT SHIVERS!!!

https://www.youtube.com/watch?v=OTGwgG9ZKGQ&feature=youtu.be

Motor - Unanticipated Obstacles

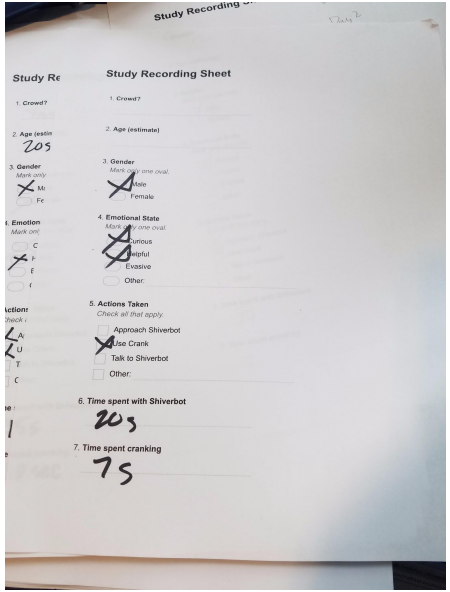




Erasers Flattened due to friction

Decreasing Friction With acrylic board

Protocols



Protocols - Data

- Recording
  - Physical data checklist/form
  - Video (inconsistently)
- Researcher Interaction
  - Google Docs
  - Apple native text-to-speech command
  - Hidden Bluetooth speaker
  - Phone call

Office DEPOT

Protocols - Environment

- Intersection of Purnell and Pausch Bridge
- Cart with cardboard boxes
- Bot wired behind boxes
- “Shivering”
  - Erasers vs. Hot Glue vs. Tape vs. Most Small Objects
  - Motors and glue
  - Weight of robot + heat duct

Results

Testing

“Awwwwww”

— General Response

- 15 data points (4 shivering)
- 8 male, 7 female
- Mostly students in 20’s
- Behaviors
  - Stand and look
  - Crouch
  - Crank
  - Talk (1)
  - Take picture (4)
  - **FIXED THE CRANK WHEN IT FELL OFF** (1 good human being)

Statistics

- Total Time Spent (Mean): 16 s
- Total Time Spent (Median): 10 s
- **Total Time Cranking (Mean): 7 s**
- **Total Time Cranking (Median): 5 s**

Statistics

Time Spent Total (s)

	Non-Shivering	Shivering
Mean	14	19.50
SD	9.59	12.15
SEM	3.03	6.08
N	10	4

Time Spent Cranking (s)

	Non-Shivering	Shivering
Mean	6.7	8.5
SD	5.23	7.77
SEM	1.65	3.88
N	10	4

Unpaired T-Test (Total Time Spent)

P value and statistical significance:

The two-tailed P value equals **0.3841**

By conventional criteria, this difference is considered to be **not statistically significant**.

Confidence interval:

The mean of Non-Shiver minus Shiver equals -5.50

95% confidence interval of this difference: From -18.77 to 7.77

Intermediate values used in calculations:

t = 0.9033

df = 12

standard error of difference = 6.089

Unpaired T-Test (Time Spent Cranking)

P value and statistical significance:

The two-tailed P value equals **0.6193**

By conventional criteria, this difference is considered to be **not statistically significant**.

Confidence interval:

The mean of Non-Shiver minus Shiver equals -1.80

95% confidence interval of this difference: From -9.49 to 5.89

Intermediate values used in calculations:

t = 0.5100

df = 12

standard error of difference = 3.529

Analysis

- Reduced sample size
- Differences in:
  - Time of day + day of week
  - Mood + schedule
  - Weather
  - Voice used + phrases used
  - Speed + timing of speech
- CMU as a variable
- Ideally, need to make shivering more low-maintenance