

Title: Low-Interference Wheelchair Footrest

Date: 4/26/2024

Client: Dan Dorszynski

Advisor: Dr. John Puccinelli

Team:

Charles Maysack-Landry — Leader

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Haoming (Bobby) Fang — BPAG

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Sam Tan — BWIG

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Problem statement:

The project aims to innovate wheelchair footrest design to overcome the limitations of current models which are often cumbersome, heavy, and restrict leg movement or access to the ground. The goal is to create a footrest that is lightweight, easily detachable, and foldable, enhancing the wheelchair user's comfort, and allows interactions with surroundings through the footrest.

Brief status update

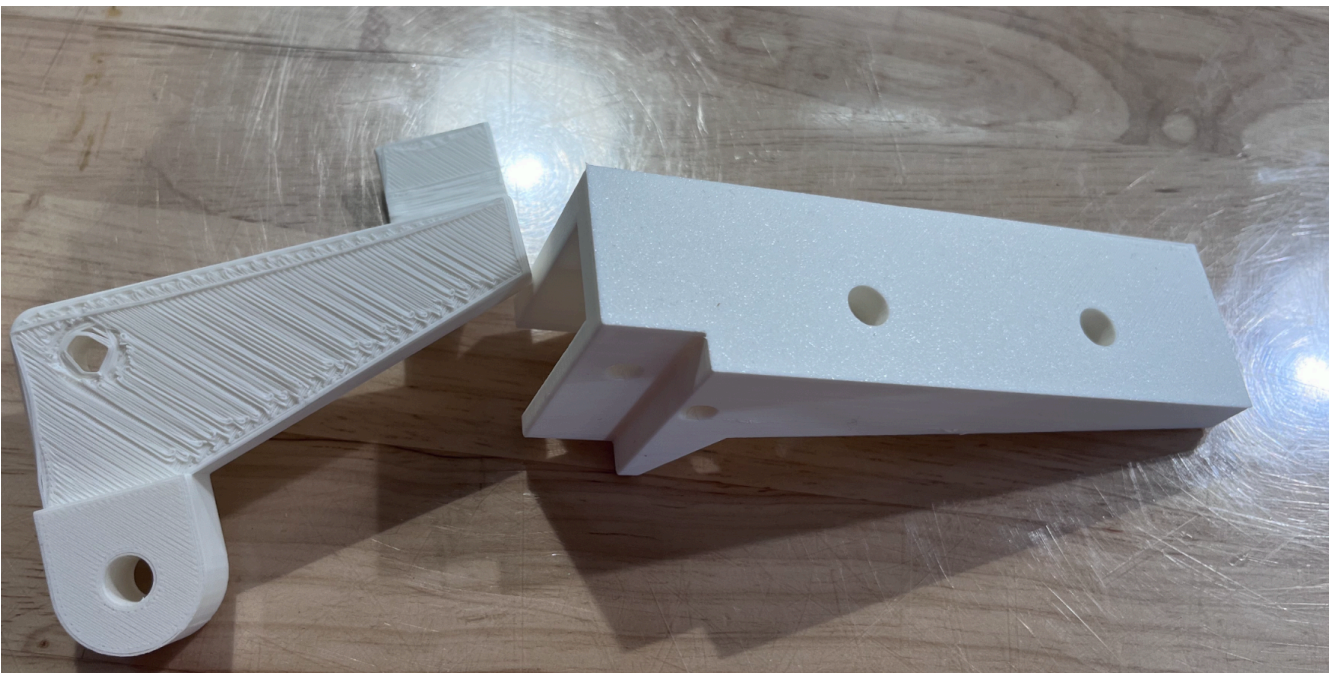
- Poster presentation completed
- All fabrication and testing completed for the semester

Difficulties / advice requests

- Talk with client and advisor about future works

Current design:

Current design is a footrest on 2 linear actuators that will be controlled by a button on the wheelchair to move back and forth under the wheelchair.



Holder for linear actuator



Materials and expenses

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Linear Motion										
Linear Actuator	A device that converts	Demotor Performance				3/15/2024	2	\$35.68	\$71.36	https://www.amazon.com/

	rotational motion into linear motion to move or control objects in a straight line.									Linear-Actuator-Stroke-Output-12-Volt/dp/BOOVFXIRW4?th=1
									\$0.00	
Raw Materials										
Aluminum	½"x36"x1/8"	MakerSpace				3/15/24	3	33	\$99	
Mounting Bracket for PA-14, PA-14P, PA-08		PROGRESSIVE AUTOMATIONS				3/18/24			\$13.92	link
Zinc ⅜ inch threaded screws	Zinc screws	Everbilt				3/18/24	1	\$8.98	\$8.98	https://www.homedepot.com/p/Everbilt-6-x-3-8-in-Zinc-Plated-Phillips-Pan-Head-Sheet-Metal-Screw-100-Pack-823322/317479248
MakerSpace Hardwares + 3D Prints										
3D prints	3D prints	MakerSpace				Varies			\$28.1	\$28.1 N/A
Hardwares	Screws, Caps, etc	MakerSpace				Varies			\$1.25	\$1.25 N/A
Current Total								Total	\$226.10	

Major team goals for the next week

1. Finish final report and final notebook

Next week's individual goals

- Jayson
 - Finish final deliverables
- Sam
 - Final report
- Bobby
 - Final report
- Charles

- Final report

Timeline

Task	Jan	Feb				March					April				May	
	26	2	9	16	23	1	8	15	22	29	5	12	19	26	3	10
Project R&D	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Empathize	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Background	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Prototyping								X	X	X	X	X	X	X		
Testings												X	X	X		
Deliverables																
Progress Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
PDS			X	X	X	X	X	X	X	X	X	X	X	X		
Prelim presentation						X										
Final Poster														X		
Meetings																
Client			X			X		X		X		X	X	X		
Advisor	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Website	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Update	X	X	X	X	X	X	X	X	X	X	X	X	X	X		

Filled boxes = projected timeline
 X = task was worked on or completed

Previous week's goals and accomplishments

- Sam previous goal
 - Poster
 - Testing
- Bobby previous goal
 - Fabrication and testing protocol
 - Meeting with welding expert
- Charles previous goal
 - Complete, print, and present poster
- Jayson previous goal
 - Finish fabrication
 - Finish final poster
- Team previous goal 6
 - Begin fabrication
 - Welding, water jetting, circuit, 3D printing
 - Complete poster

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Sam	4/26/2024	Testing	3	3	38
Bobby	4/26/2024	Fabrication/Welding setup	3	3	31
Jayson	4/26/2024	Fabrication, Testing, Poster, Meetings	10	10	55
Charles	4/26/2024	Fabrication, Testing, Poster	5	5	47