

**University of Waterloo**  
**Co-operative Work Terms**

**Thushanth Parameswaran**  
**21001843**  
**3A Mechanical Engineering, Honours, Co-operative Program**  
**Mechatronics Option**

<b>Work Term</b>	<b>Employer</b>	<b>Evaluation</b>
Jan - Apr 2023	INEOS Styrolution Canada Ltd Styrolution Canada Ltd Sarnia Ontario Canada Mechanical/Electrical Engineering	VERY GOOD
Sep - Dec 2023	Clear Vision Technologies Divisional Office Vancouver British Columbia Canada Engineering R and D Co-op Student	VERY GOOD
May - Aug 2024	S&C Electric Canada Ltd Canadian Division Head Office Etobicoke Ontario Canada Mechanical design Assistant	EXCELLENT
Jan - Apr 2025	Avestec Technologies Inc Divisional Office Burnaby British Columbia Canada Robotic Engineering Co-op	EXCELLENT

**Planned Future Work Term(s)**

Sep - Dec 2025

May - Aug 2026

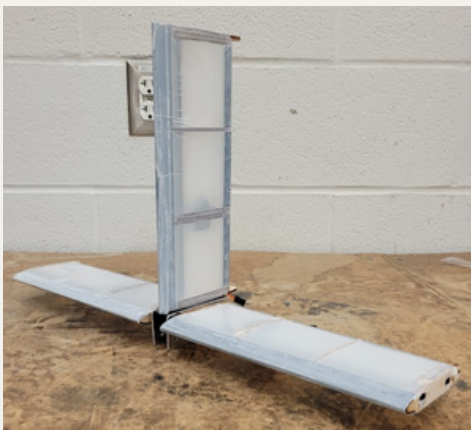
Disclaimer: This evaluation does not constitute an employment endorsement or recommendation. Employer evaluations of student contributions and achievements during the work term are conducted as part of the University of Waterloo's Co-operative (Co-op) Education model. Like academic grades, overall evaluations are part of the assessment of a student's progress in the co-op portion of their degree studies. These assessments are completed using criteria set out by the University, not the employer, and do not reflect the employer's criteria or assessment metrics.

## 12.6V Robot Battery Pack



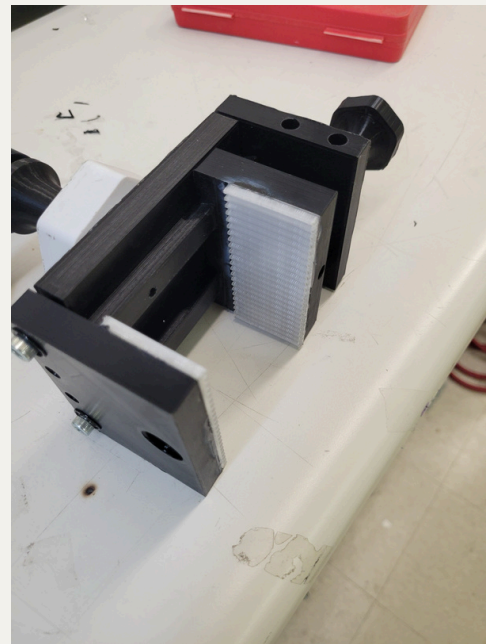
- Redesigned robot battery to incorporate a rail mechanism and quick-connect system, enhancing usability and ergonomics
- Spot-welded individual battery cells and soldered 18 AWG wires to weld tabs and connectors for secure electrical connections
- Iterated various locking mechanisms to ensure secure connections, consistent power delivery, and improved handling

## Empennage



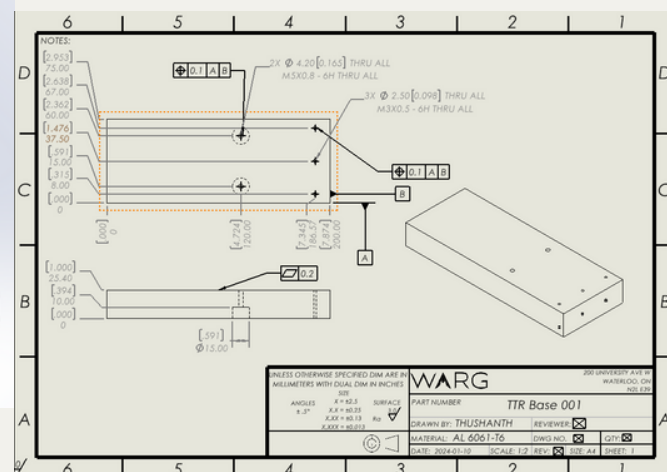
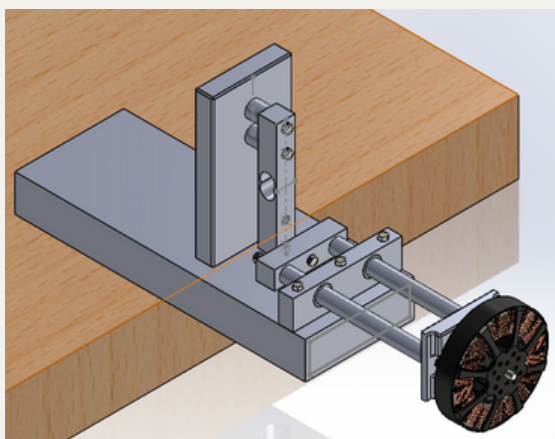
- Utilized the coefficient of tail volume method in Excel to calculate the appropriate sizing for both the horizontal and vertical tail surfaces of the empennage.
- Researched various NACA airfoils to optimize for ease of manufacturability and flexibility to change downforce generation as required.
- Designed the empennage using SolidWorks and integrated it with the tail boom of the aircraft while minimizing overall weight.
- Employed diverse manufacturing techniques such as laser cutting, 3D printing, and heat shrinking to construct the empennage with a focus on reducing defects.

## Three-Axis Camera Clamp



- Designed and used FDM 3D printer to create camera mount that will used to test various cameras at various working distance and angle.
- Used various filament like TPU, Nylon and PLA to manufacture the parts.
- Assembled using hot melt inserts for easy replacement.

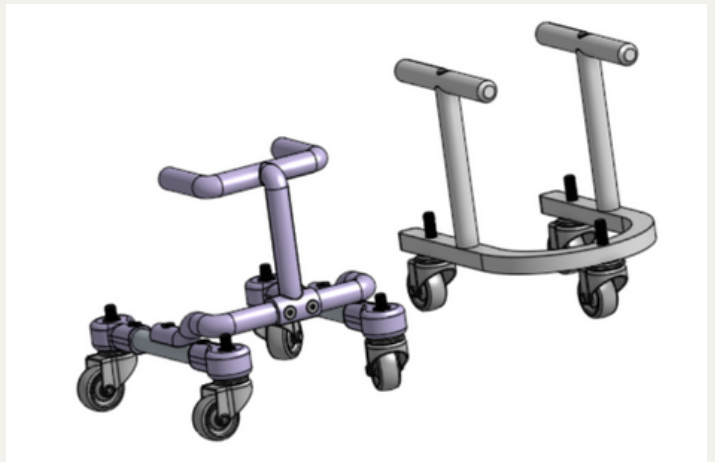
## Thrust Testing Rig



- Design and manufactured the thrust testing to rig which measures the thrust produced by the propeller using loadcell and Arduino micro controller.
- Used Lathe, Milling machine, Drill tap and FDM 3D printer to manufacture. (DFA & DFM)
- Utilized GD&T to create manufacturing drawings

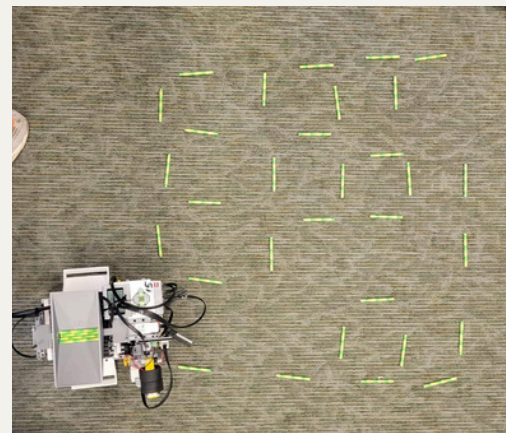
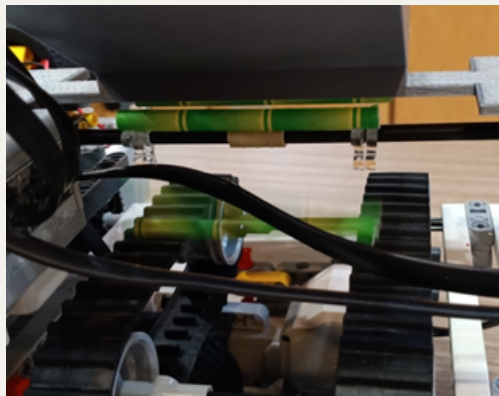
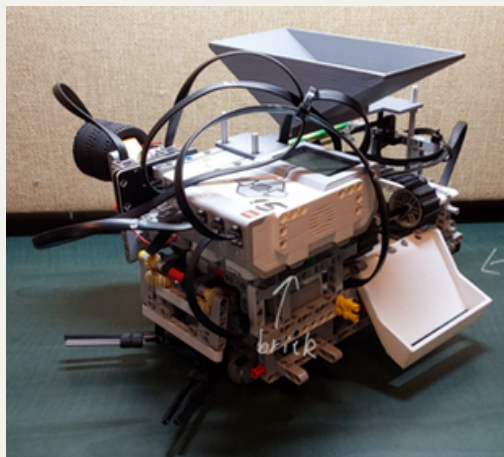


## Assistive Walker Device



- Researched how the appearance of the Walker used on the Trexo robotic leg affected the users
- Interviewed the CEO of Trexo Robotic and the customer on what changes can be made to improve the Walker where the Trexo robotic leg gets attached
- Based on the feedback, used OnShape to design an alternative walker.
- Prototyped a scaled-down model using a lathe, vertical mill, 3D Printer, and waterjet.

## A-Mazer(ME101 Group Project)



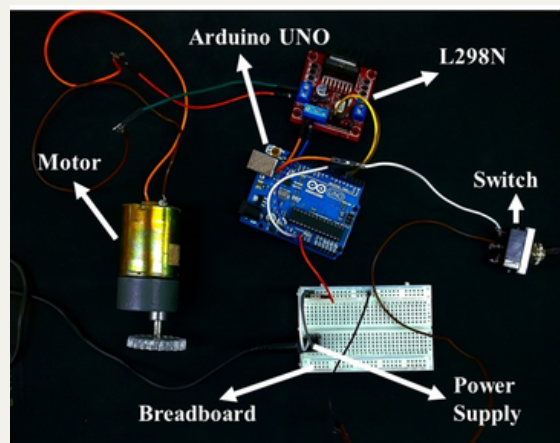
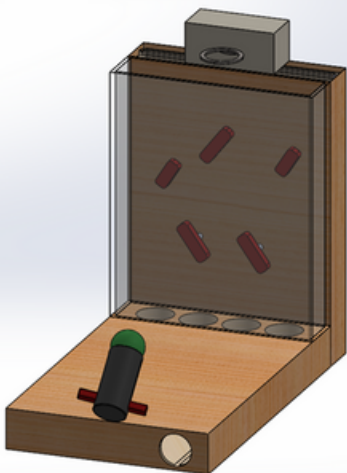
- Prototyped the funnel and the dropper mechanism of the robot in Solidworks and 3D printed them.
- Developed a maze algorithm which enabled the robot to build any square format maze in RobotC.
- Developed an efficiency testing procedure, to streamlining testing times for enhanced productivity

## Composite optimization and Wet Layup



- Improved efficiency by strategically planning and cutting fiberglass cloth to align with aerobody profiles, optimizing composite material and wet layup time.
- Used Solidworks to calculate the surface area of the aero body to estimate the required fiberglass.
- Repurposed scrap fiberglass cloth to reduce the cost by 20%.

## Cannon BallZ (ME100 Group Project)



- Designed and prototyped the sliding and launching mechanism in Solidwork
- Used Arduino uno and H bridge to control the moving target

# Thushanth Parameswaran

• Email: [thushanth2004@gmail.com](mailto:thushanth2004@gmail.com) • Phone: (778) 522-4797

21001843

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## Overview of Qualifications

- Ability to communicate with team members effectively
- Have experience in Java and Python languages
- Practical experience in SolidWorks and AutoCAD
- Ability to multitask and prioritize activities
- In depth knowledge about common Office 365 and Adobe applications
- Excellent leadership and time management skills

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## Education

Candidates 4 BASc in Mechanical Engineering

2022-2027

New Member of UWaterloo Midnight Sun Design Team

- Aero body
  - Will be learning to manufacture carbon fiber and its mold to create the exterior of the solar car
- Hardware
  - Will be learning to create PCB using Altium

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## Work Experience

Cashier, KFC, Vancouver B.C

Dec 2021- Jun 2022

- Showed teamwork during busy hours by communicating effectively resulting in smoother operation
- Improved problem-solving skills by dealing with rude customers in a calm manner
- Showed dedications by staying after works to finish my assigned task resulting in smoother transition
- Developed organization skill by restocking ingredients in easily accessible manner resulting in more efficient operation

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## Volunteering

VP of Engineering Club at High School

Nov 2021- Jun 2022

- Organized activities and design challenges with other team members
- Developed presentation skills through presenting monthly challenges to the club members
- Effectively communicated with the club member to determine their areas of interest

Tutor at High School Homework Club

Nov 2021- Jun 2022

- Showed willingness to learn from others by listening to follow tutors
- Learned to explain same topic in various ways
- Developed communications skill by tutoring students

Sunset Community Center

Jan 2018- Mar 2021

- Improved creative thinking skill by brainstorm activities as team for special community events like Canada Day
- Strengthened my teamwork skills by collaborating with other team members

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### Other

Air Cadets

Sep 2017- Jun 2022

- Earned the second highest rank “WO2” by demonstrating strong leadership skills
- Developed confidence and polished PowerPoint skill through instructing junior cadets for 2 years
- Improved my time-management skill since I must hand in my lesson plan 2 weeks in advance
- Displayed teamwork skills by providing feedbacks to team members on uniforms and drill

Pilot

- Through Air Cadet program, I earned the opportunity to get my TC Private Pilot Licence.
- Demonstrated critical thinking and improved organization skill by creating flight plan
- Enhanced my communication skill and confidence by flying solo and talking to ATC

Dragon boating

Mar 2018- Mar 2020

- Improved teamwork skill by listening to leader’s instruction
- Showed dedication to the sport by going to every single practice

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### Certificates

- National Lifeguarding for pool and beach
- Standard first aid and CPR
- Airway Management and Oxygen Administration
- Water Safety Instructor

# UNIVERSITY OF WATERLOO

## UNOFFICIAL GRADE REPORT

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### Fall 2025

PD	22	Eng Professionalism & Ethics
Term Average:	N/A	Decision:

### Spring 2025

ME	321	Machine & Mech Vibration Dynam
ME	340	Manufacturing Processes
ME	300A	Seminar
WKRPT	300	Work-term Report *
		*Degree Requirement, Not in Average
ME	354	Thermodynamics 2
ME	303	Adv Engineering Mathematics
ME	351	Fluid Mechanics 1
Term Average:	N/A	Decision:

### Winter 2025

PD	8	Intercultural Skills	CR
COOP	4	Co-operative Work Term	CR
Term Average:	N/A	Decision:	

### Fall 2024

ME	250	Thermodynamics 1	80
ME	262	Microprocessors & Digi Logic	72
ME	220	Mech of Deformable Solids 2	80
ME	203	Ordinary Differential Equation	74
WKRPT	200	Work-term Report	95*
		*Degree Requirement, Not in Average	
ME	200B	Seminar	
ME	212	Dynamics	85
FINE	130	Intro Digital Imaging	73
Term Average:	77.33	Decision:	Good Standing

### Spring 2024

PD	13	Research in the Workplace	CR
COOP	3	Co-operative Work Term	CR
Term Average:	N/A	Decision:	

### Winter 2024

ME	219	Mech of Deformable Solids 1	77
ME	202	Statistics for Engineers	73
ME	230	Control of Material Properties	80
ME	200A	Seminar	
WKRPT	100	Work-term Report	75*
		*Degree Requirement, Not in Average	
ME	269	Electromech Dev & Power Proc	96
ME	201	Advanced Calculus	75
STV	201	Special Topics	92
ARTS	450	Global Engagement Seminar	CR*
		*Degree Requirement, Not in Average	
Term Average:	82.17	Decision:	Excellent Standing

### Fall 2023

PD	20	Strategies for Career Success	CR
COOP	2	Co-operative Work Term	CR
Term Average:	N/A	Decision:	



### Spring 2023

BET	100	Entrepreneurial Pract Found	79
ME	101	Intro Practice 2	86
ME	100B	Seminar	
ME	123	Electrical Engineering	86
ME	115	Material Struct & Props	79
MATH	118	Calculus 2 (Eng)	78
Term Average: 82		Decision: Excellent Standing	

### Winter 2023

PD	19	Tactics for Workplace Success	CR
COOP	1	Co-operative Work Term	CR
Term Average: N/A		Decision:	

### Fall 2022

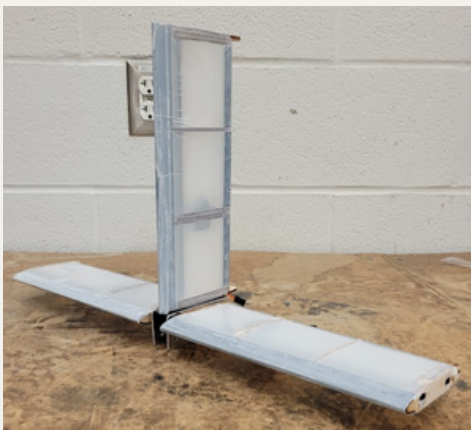
GENE	119	Problems Seminar	
MATH	115	Linear Algebra (Eng)	61
CHE	102	Chemistry for Engineers	74
MATH	116	Calculus 1 (Eng)	72
ME	100	Intro Practice 1	79
PHYS	115	Mechanics	75
Term Average: 72.82		Decision: Good Standing	

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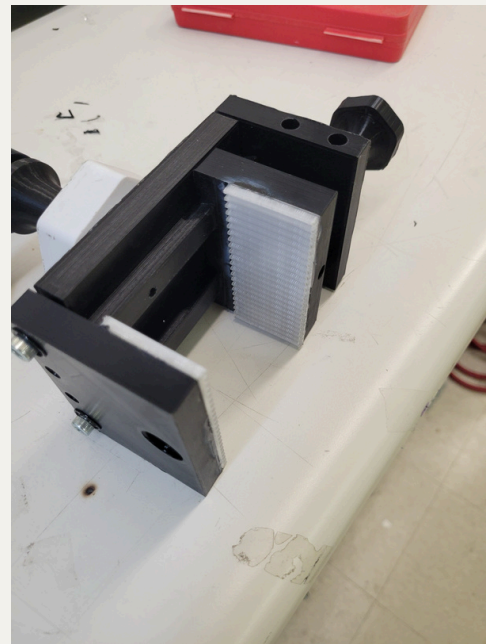
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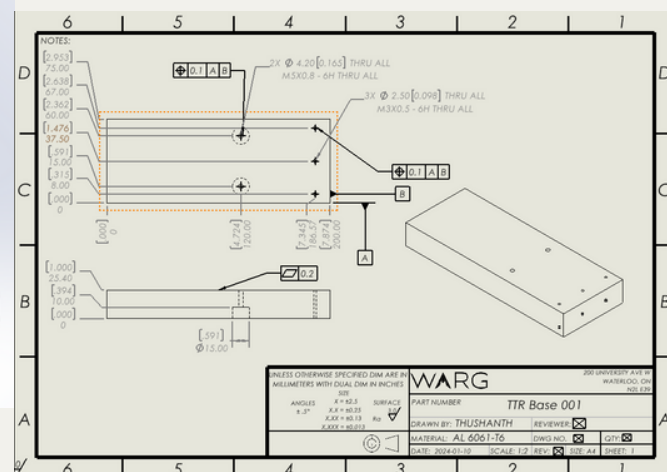
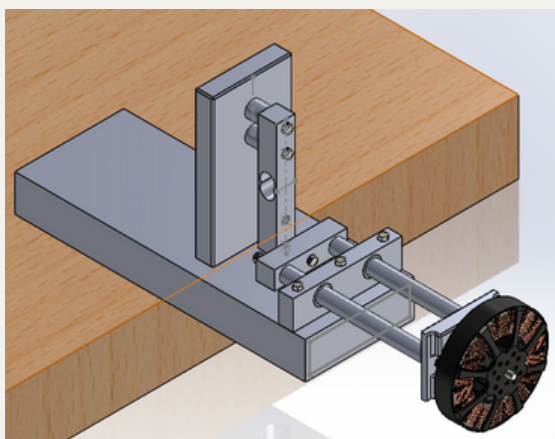
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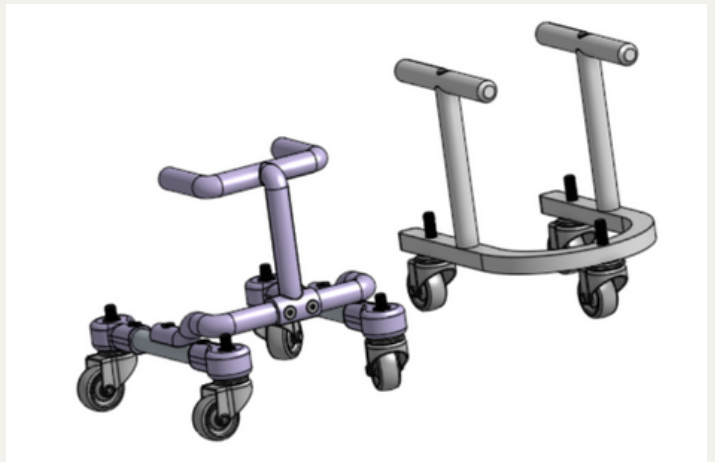
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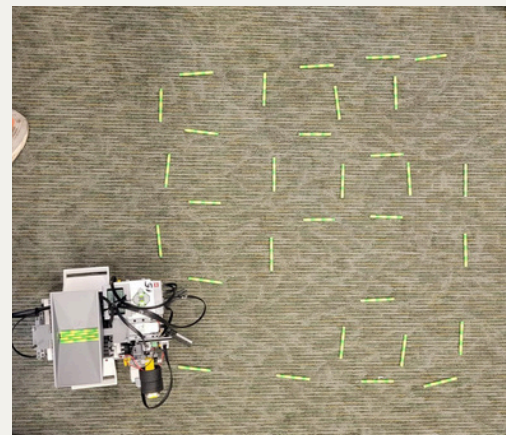
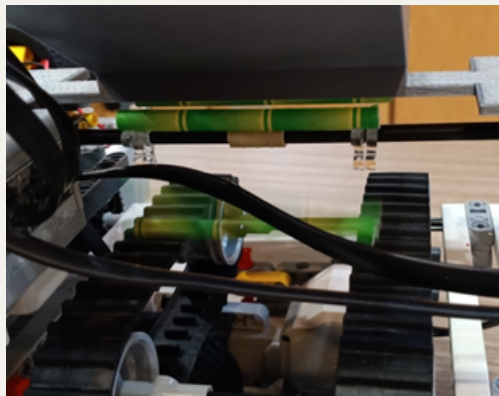
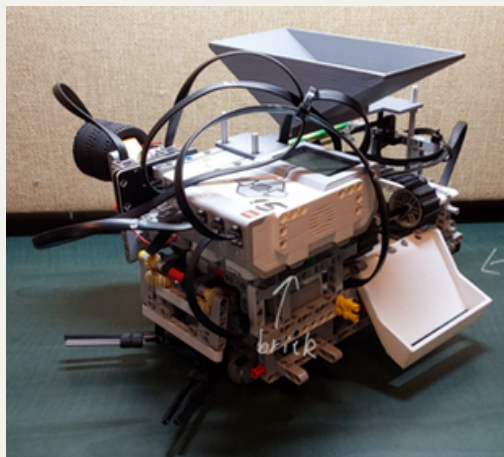


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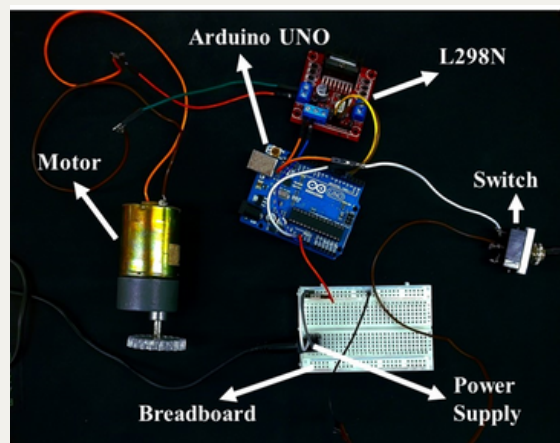
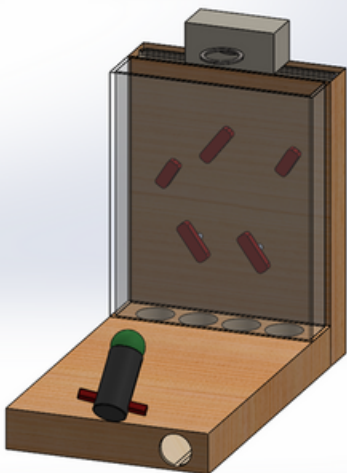


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**This job is funded by the Government of Canada as advertised in the job posting. To be eligible you must be a Canadian citizen, permanent resident or a protected person defined by the Immigration and Refugee Protection Act. Do you meet this requirement?**

Yes

**Are you open to an 8 months co-op?**

No