

Burak Brooke Karabillioglu

Mechanical Engineering | with focus on CAD / FEA / CFD

Location: Oshawa, ON/ Open to Relocation

EIT Eligibility: Eligible with all Provinces

Executive Summary

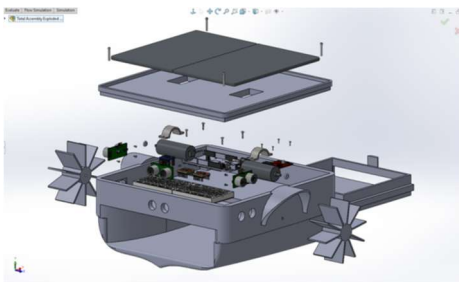
Mechanical Engineering graduate (Ontario Tech University) with extensive hands-on experience taking engineering projects from initial CAD concepts to functional physical hardware. With a background in structural FEA modeling, fluid dynamics (CFD), physical rapid prototyping, and closed loop control systems.

Core Engineering Skillset

Design & Analysis:

- SolidWorks, Siemens NX
- SolidWorks and NX Simulation
- MATLAB

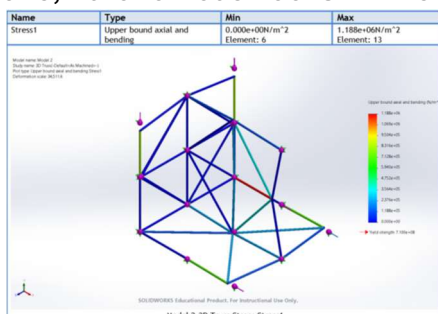
Featured Projects Overview



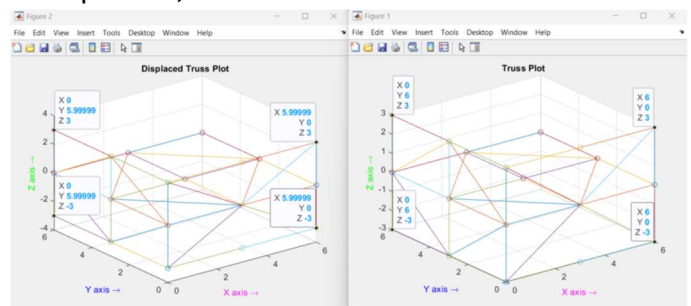
Capstone; Autonomous Pool Skimmer Robot



Capstone; Autonomous Pool Skimmer Robot



Finite Element Methods: Truss Stress
Analys.

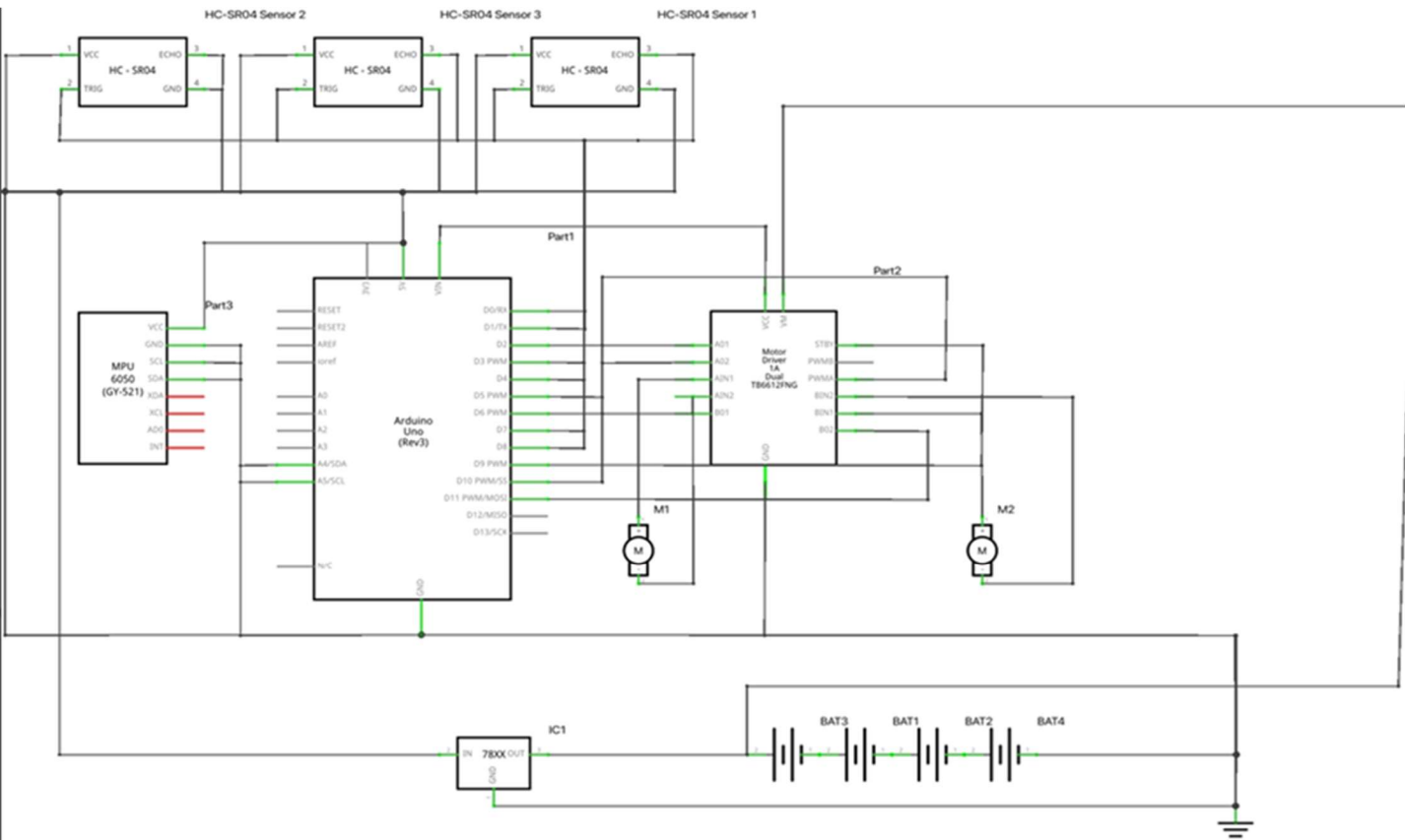
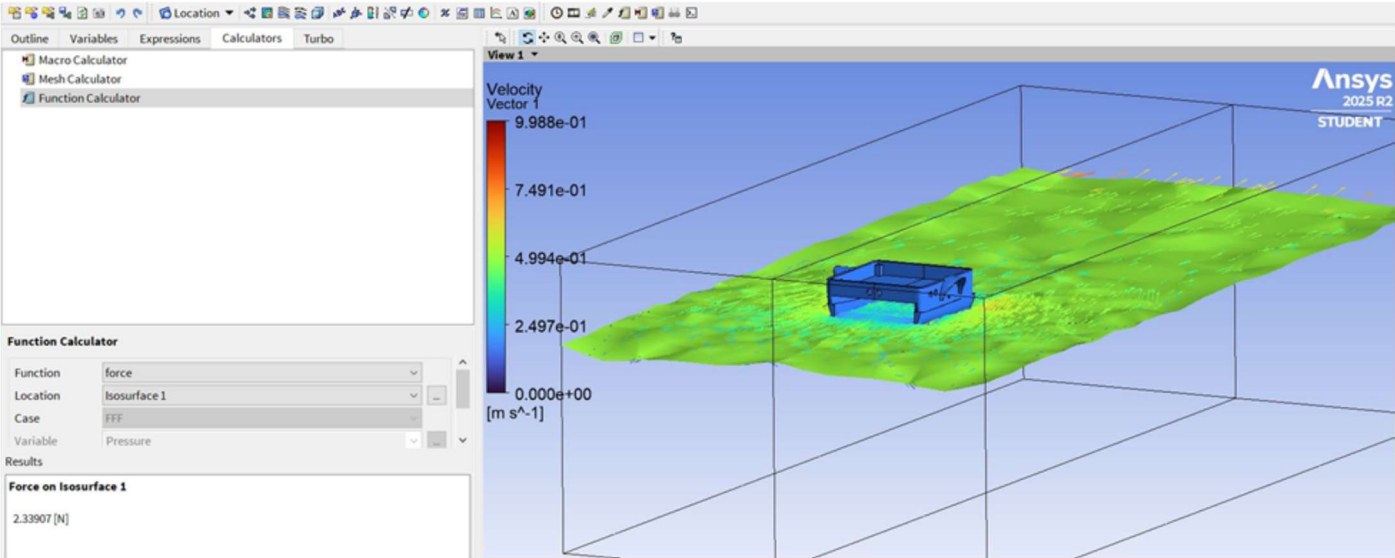


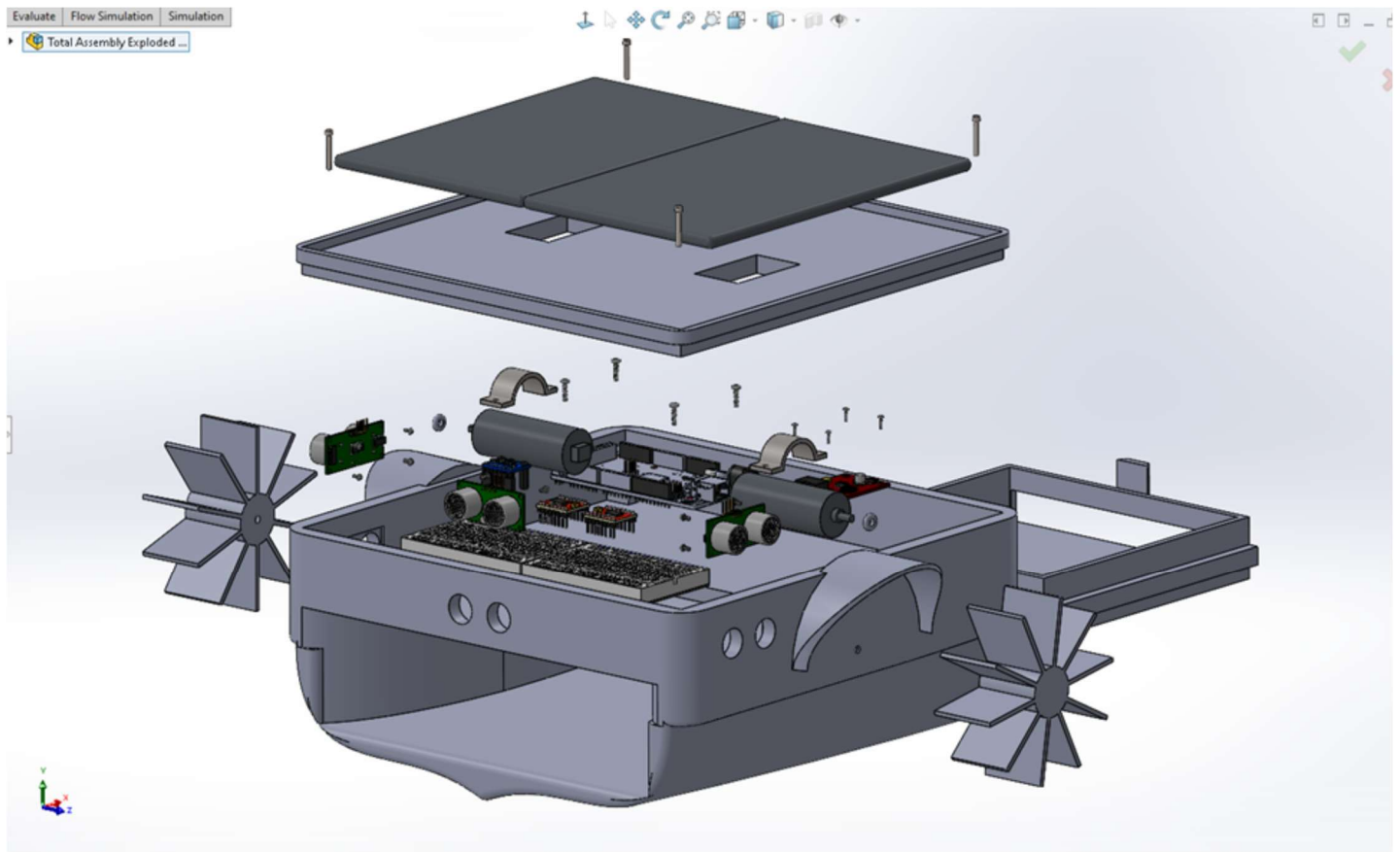
Finite Element Methods: Truss Stress
Analys.

Autonomous Marine Skimmer

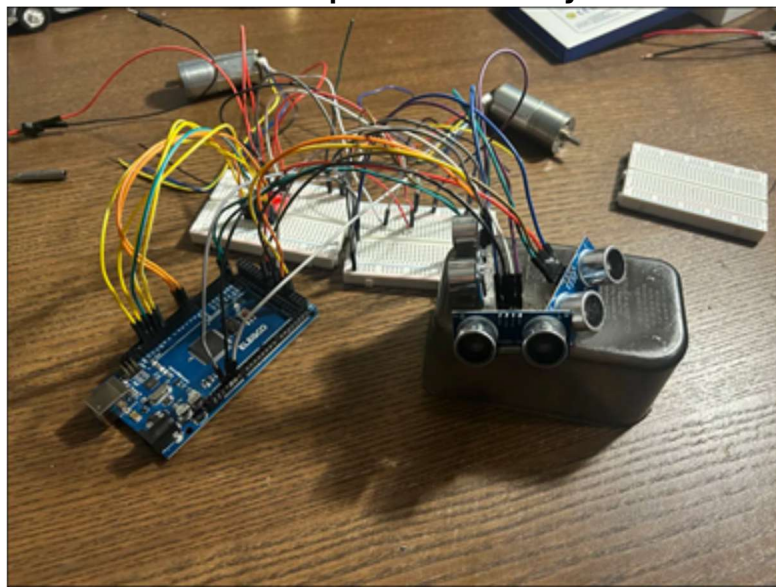
Capstone: End to End Mechanical Design & Prototyping

Designed and built an autonomous pool skimmer robot focused on modularity, hydrodynamics, and structural waterproofing.





Total Exploded Assembly

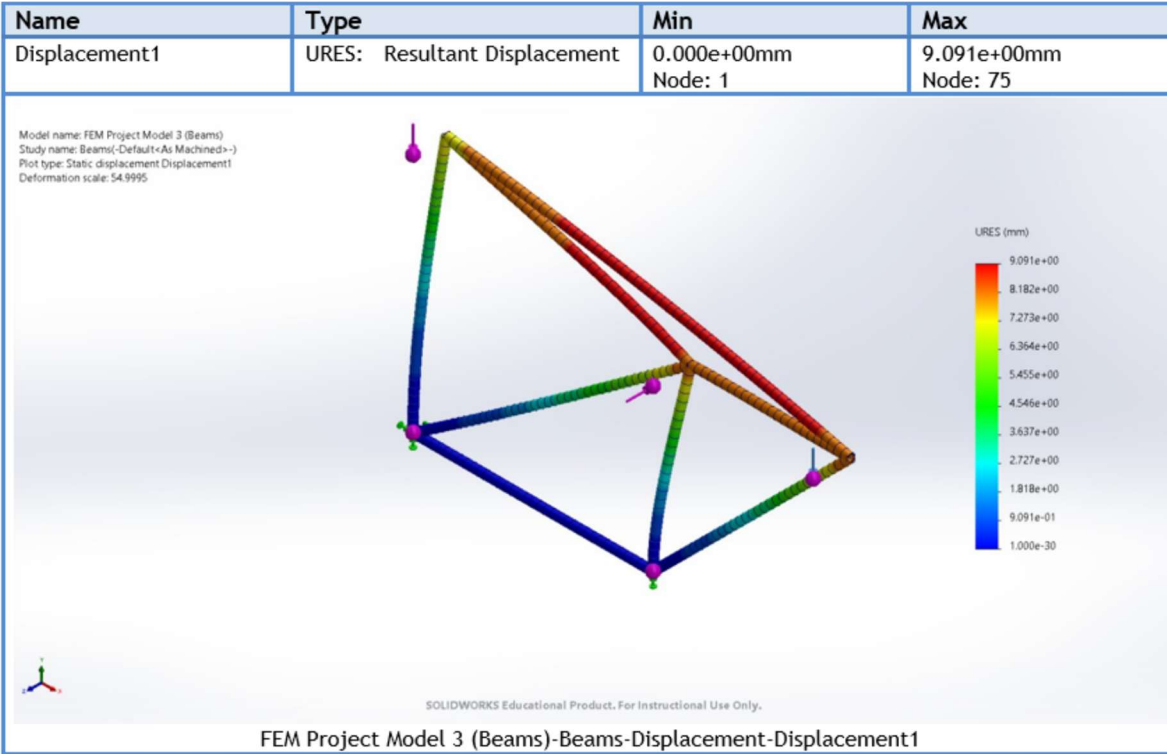


Electrical Subsystem

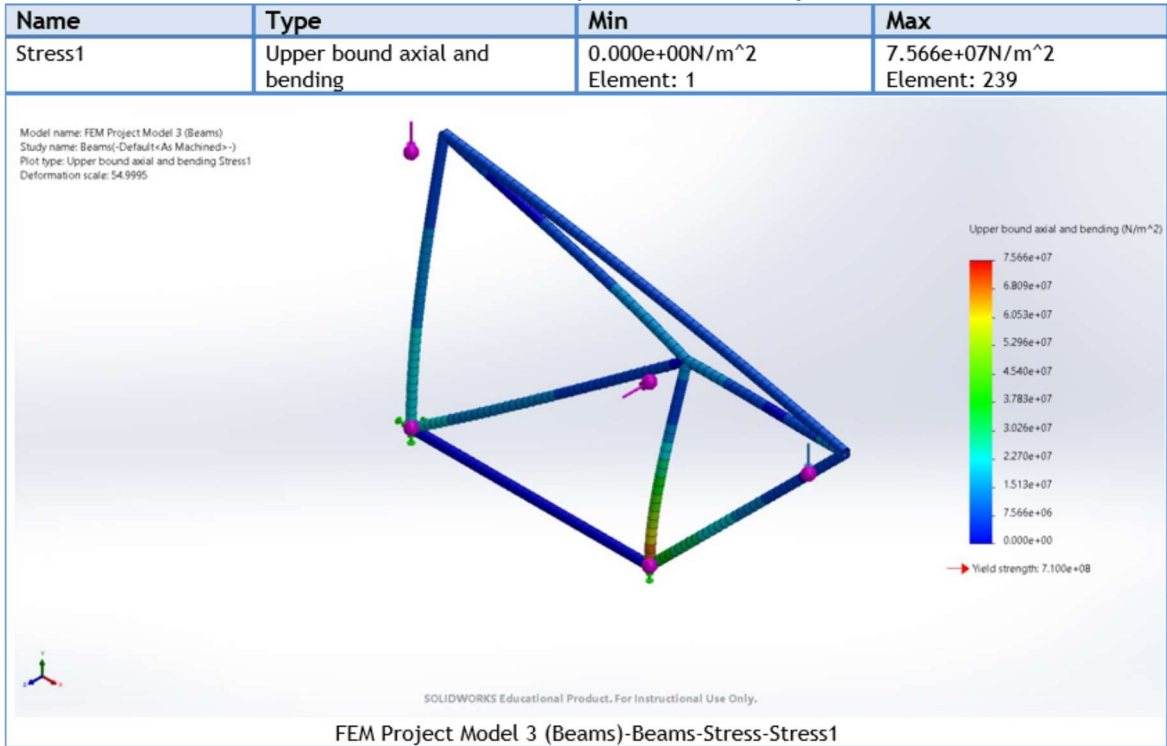
Finite Element Methods Truss Analysis

FEM Project: Multi-Element Beam & Frame Modeling

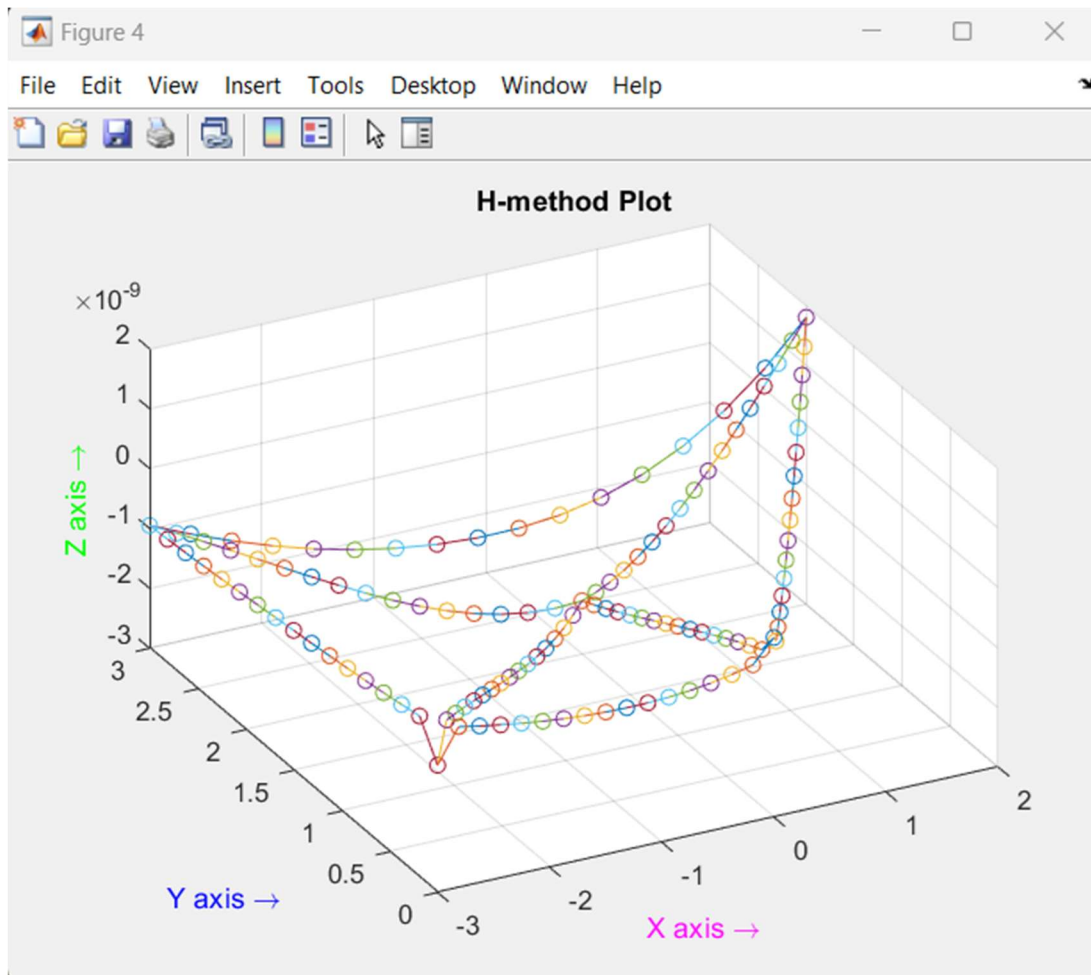
Constructed and validated multi-bar/beam 3D space frames using SolidWorks Simulation and custom MATLAB numerical solvers.



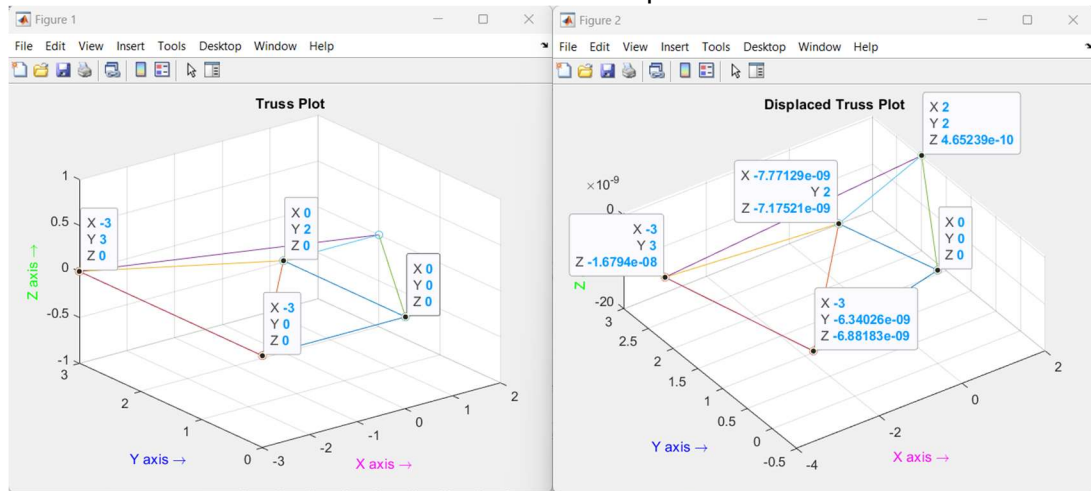
SolidWorks Displacement Study



SolidWorks Stress Study



Custom MATLAB H-method Displacement Solver



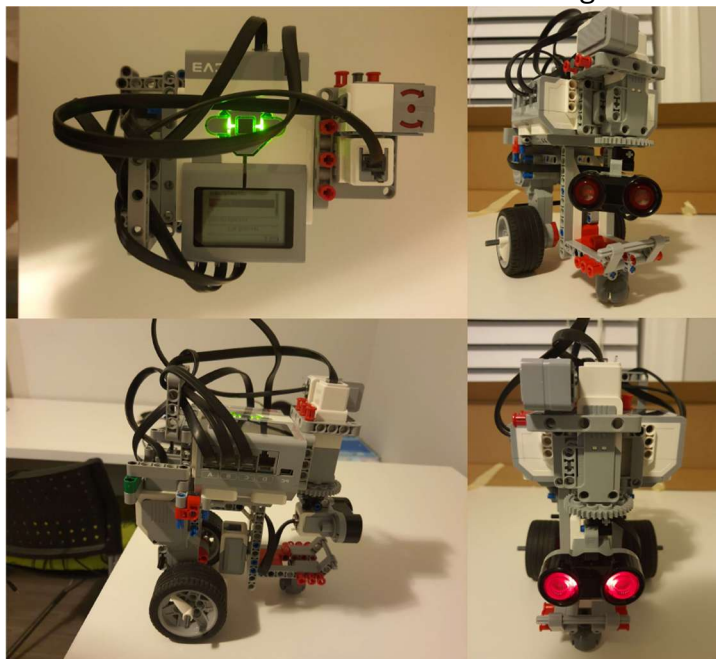
Custom MATLAB Truss Displacement Solver

Miscellaneous

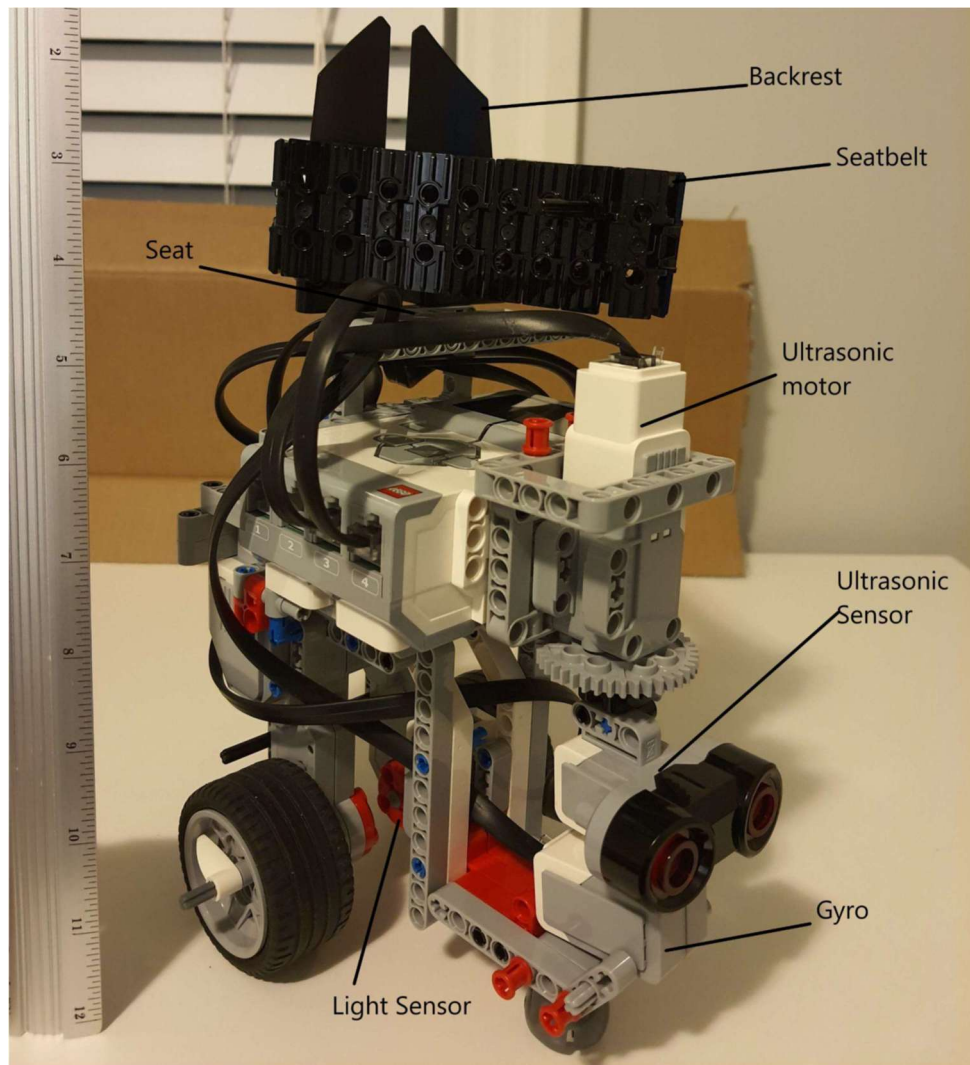
Projects and hobbies



Hands on CNC Aluminium Milling



Multiview of Maze Finding Robot



Maze Finding Robot