**Progress report 2023-07-28**

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**Restatement of Goals:**

The major goals and milestones of this project are as follows:

1. Project Proposal **✓**
2. Literature Review **✓**
3. 2d Simulation **✓**
4. Create Model **✓**
5. Compile design requirements **✓**
6. Design Platform **(in progress)**
7. Simulate Platform **(in progress)**
8. Produce Prototype
9. Validate Model
10. Finalise Report

**Progress:**

The first iteration of the mathematical model is complete. To validate it, a prototype system must be LIMed platform must be built. This platform has been designed in CAD, largely based on Powrie’s design. There are a few adjustments, mostly relating to tolerances, that need to be made on the CAD design before drawing files will be produced and sent for machining and laser cutting at the university.

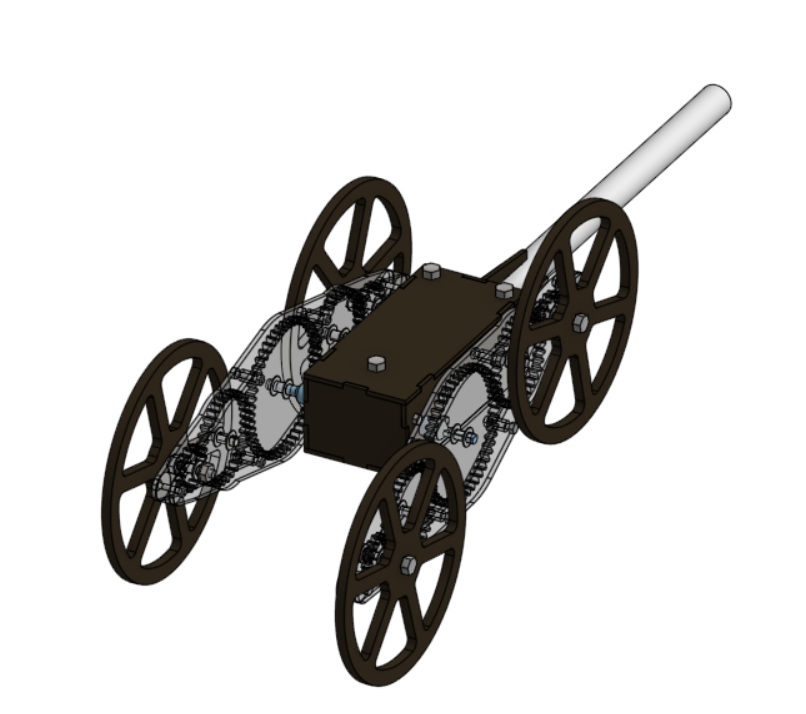


Figure 1 Initial CAD design

In addition, this CAD model has been imported into the simulation software, Drake. Initial tests indicate that the gearing and inertia are reflected accurately in the simulation. The current focus is on implementing accurate friction for the wheels and realistic torque profiles for the motors.

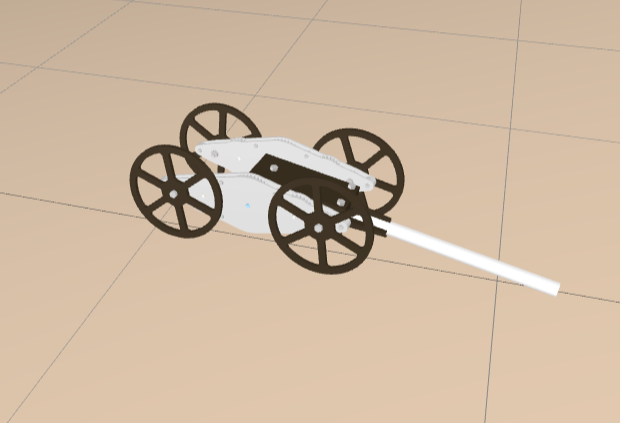


Figure 2 Simulation of CAD model