During the summers of 2016 and 2017, I worked at <a href=" http://www.revrobotics.com/"> Rev Robotics</a>, an educational robotics company which provides parts and control systems for high school robotics teams participating in the FIRST Tech Challenge. While there, I worked on various projects ranging from improving a robotics kit meant to be used to teach robotics in the classroom to developing example robots using only Rev parts. One of these example robots was a working Wall-E robot which was developed for promotional purposes. This robot was independently designed, assembled, and programmed over the course of a week.

//TODO

I designed this robot from the ground up using only Rev Robotics parts and a Wall-E toy to base my measurements off of. As I was using a set build system to create this robot, I began by using the 3 sizes of wheels to determine my scale factors, resulting in two possible scale configurations. I then selected the smaller option to challenge myself because I viewed it as possible through careful planning. This resulted in a small very compact robot with very little tolerance in which all the internal space was utilized.

Due to having such tight tolerances, I completed the entire CAD model prior to assembly or prototyping any individual subsystem in order to ensure all the different subassemblies would fit together before building the actual robot. At completion Wall-E was able to drive around, fully articulate its head and neck, move its arms around, and open and close its flap.

While I served as a Mechanical Engineering Intern for Rev Robotics, I worked on various projects ranging from helping improve educational robotics kits to be