Michael O’Connor

Team G: Bobs the Builders

Teammates: Christian Heaney-Secord, Eric Newhall, Guillermo Cirde

ILR 5 – System Demonstration

April 19, 2015

Individual Progress

System Demonstration:

For this week's system demonstration I worked to design and fabricate the flux dispenser assembly that will be capable of moving along one axis and extruding flux out of a plastic syringe. Working with Christian, I laser-cut acrylic parts for the flux dispenser and machined aluminum angle to use as mounting plates for our motors and idler pulley. I also made aluminum brackets to attach different components of the subassembly. I added these components and attached the timing belt with the assistance of my teammates(Figure 1). I also worked on the wire feeder prototype; making the gears and mounting plates needed to pull the wire through our bolt cutters(Figure 2).

Website:

I have made sure to update sections of the website as I have worked on different parts of the project.

Challenges and Issues

Honestly, the major problem our team faced leading up to this system demonstration was that spring break was the week before and several of our team members, myself included, were traveling for the majority of the week. I was out of the country for eight days over the break and had inconsistent access to wifi, making it difficult to communicate and coordinate with team members. We also had an issue with our system demonstration in which one of the subassembly refused to move along the rail system on which it was mounted. We later discovered that this issue was caused by a wire on the subsystem getting caught on the underside of the frame when in certain positions, immobilizing the system.

Cross-Referencing with Teammates

Christian and I worked together to create the components for the flux dispenser subsystem. We machined the pieces needed and attached them as well as the timing belt onto our system. Christian also worked to mount the bolt cutters to frame to allow for future wire cutting.

Eric has been working on the computer vision portion of our system and was able to get our Playstation Eye to successfully recognize the different orientations of the part. Eric also helped to create the program to have our different subsystems work in unision.

Guillermo worked to simplify our program and GUI, creating functions that allow for easier motor control and positioning.

Figures

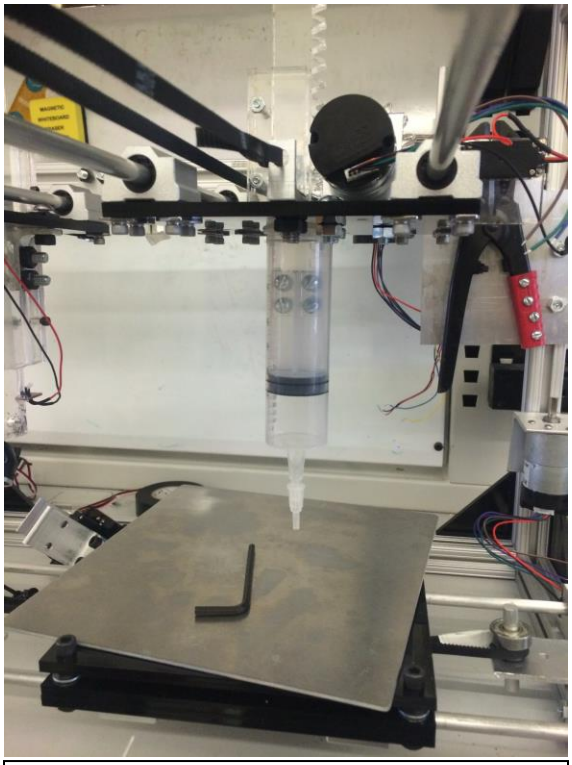

Figure 1: Side view of plastic syringe mounted on rails system with rack and pinion attached above

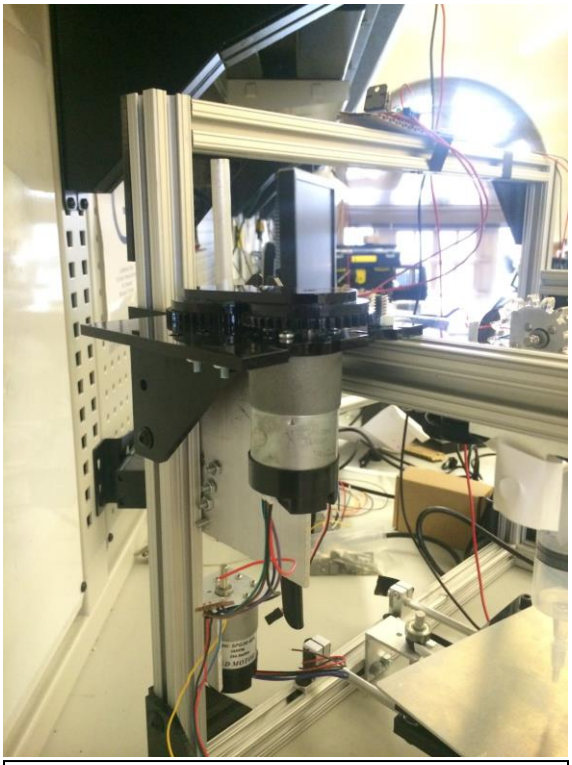

Figure 2: Initial prototype of wire feeder system with gearmotor mounted underneath

Plans for Following Week

My plan for next week is to finish creating our wire feeder and cutter systems and integrate them with our flux dispenser system. The wire feeder and cutter system will consist of the wire being fed through pulleys covered in a high friction material and through a pair of bolt cutters. The bolt cutters will be actuated by a gearmotor mounted to the side of our frame. We also want to begin designing our hopper system as it is our goal to prototype it the following week.