

Ian Hartwig

Team B: Monkey Bots

Teammates: Ian Rosado, Stephanie Chen, Trevor Decker

ILR 08

April 9, 2015

## Individual Progress

In the last week, I started to build our electrical control system. This included writing some new firmware to get PWM control of the motor and wiring up a power supply we found in the robotics club. Since it is a server power supply but still uses a 24 pin ATX plug, we can control the power by just shorting 2 of the pins together. At 2x 12V 15A supplies, this should be sufficient to power all of our motors from a tether. See a detailed layout of the system in figure 1.

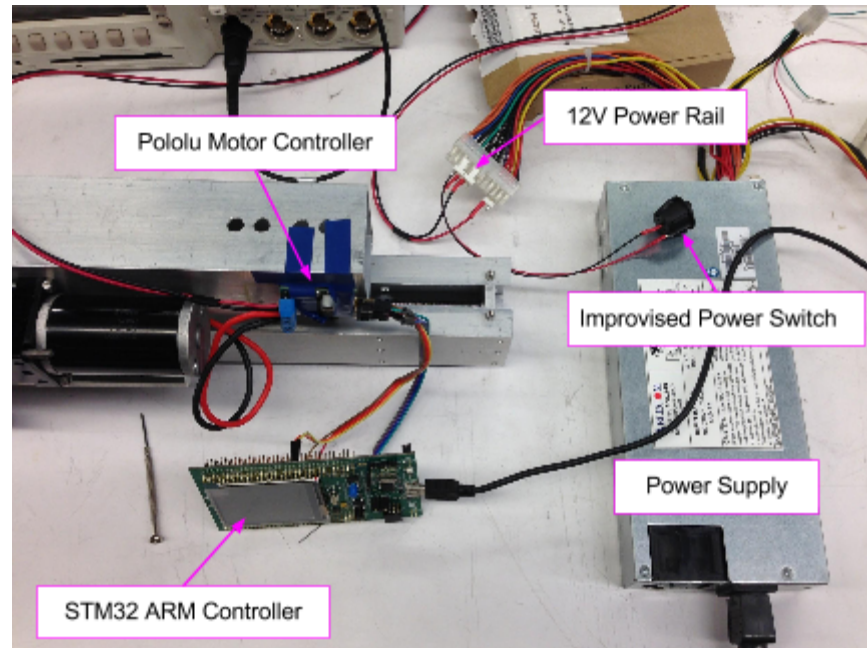


Figure 1: Basic motor power system.

I also worked on machining more parts that we had at demo. We had to replace several spacers in the pivot gearbox with aluminum versions rather than acrylic, and I helped finish the machining on these.

## Challenges

We experimented with a new style of gripper this week, but it still needs some work. Our new design is a single piece of c-channel that uses the pivot gearbox to rotate into place. This definitely has enough power to hold itself up and has enough normal force to hold up the weight of the robot, but we need to work on mounting spacers inside of the gripper so that it does not rotate off of the window frame.

As a team, we definitely are feeling time pressure compared to the amount of work that we still need to finish.

## Teamwork

Ian Rosado and Stephanie worked to finish mechanical parts in our project so that we can build more electronics on it. Ian focused mainly on the cleaning unit so that we were able to demo a manual cleaning of the window. He also worked on building a custom sprocket to drive power chain for the cleaning unit. Trevor worked with Ian on the new cleaner parts since he made the original page. Stephanie worked on machining parts so that we could demo the new gripper and pivot work. All of us were hard at work as seen in figure 2.

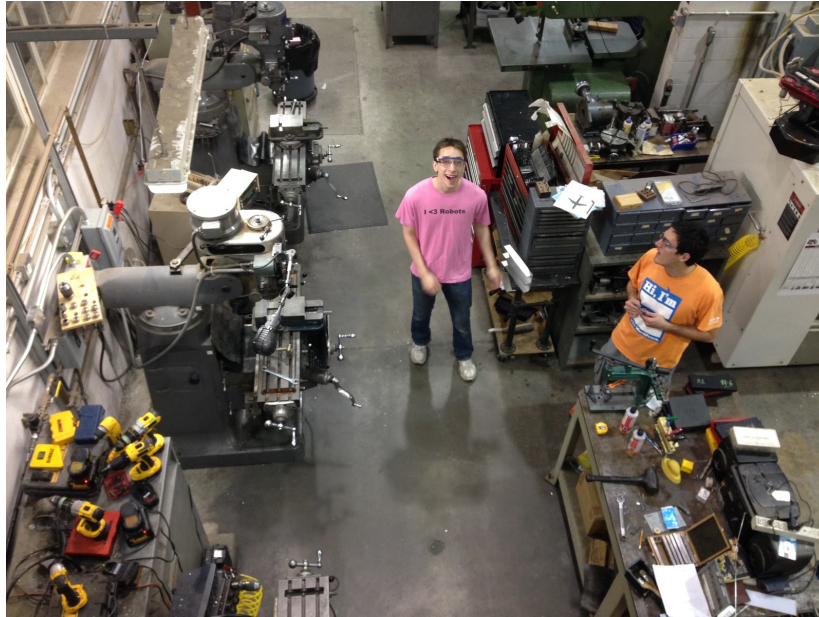


Figure 2: Happily working last minute in the shop.

## Plans

Next week, we need to continue to refine the cleaner functionality. This will require effort from all the team members. Ian Rosado and Trevor are working on the new part designs and revision. Stephanie will be helping machine parts for this, and I need to bring up the stepper drivers. Although we already have SPI support on our boards, I'm not sure what the command set we need to use to control steppers is. I will be working on this this week.