

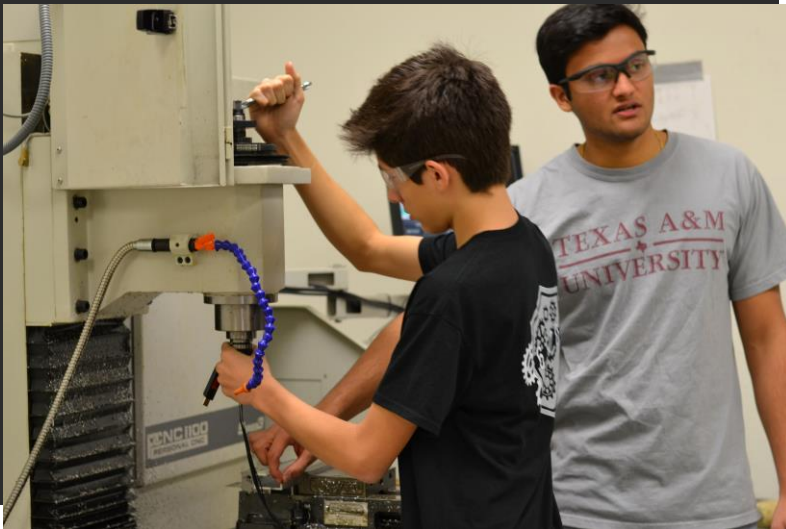
THE VALOR OBSERVER

6800

Build-Season Week 2
Saturday, January 20th, 2018



Valor Recap!



Valor's Part Manufacturing

Since we finished CAD last week we now need to manifest those parts to place on the robot; this is accomplished by milling out metal plates and box tube. Mill files generate a path for a machine's drill or flat mill bit to follow, cutting out the part with computer precision. We cut out screw holes, bracket shapes, bearing holes, and other shapes that people couldn't cut in much faster times. These parts take about 10 minutes each, and once cut out and cleaned are ready to be placed on the robot.



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FIRST® Robotics Competition

Student Spotlight



Cole Ibanez

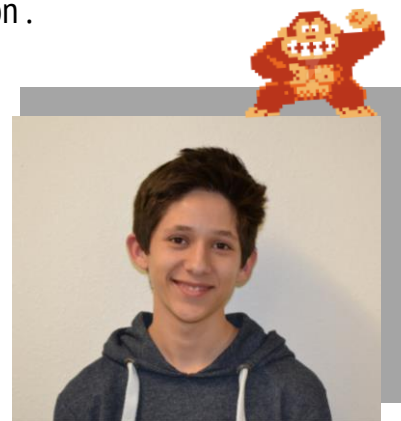
Object Collection Device (OCD) Sub-Team

I am currently working on the Power Cube Intake device for our 2018 season. My favorite part of being on Valor is that I get to do what I enjoy most while also being in a team environment with my friends. I am most looking forward to participating in a competitive environment, like that of an FRC competition.

Gabriel Diaz

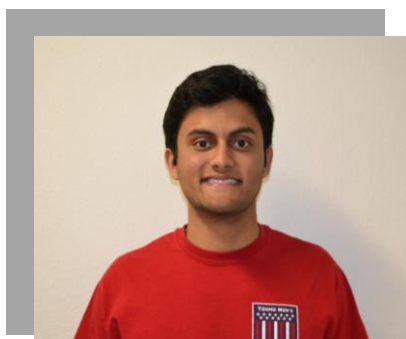
Object Collection Device (OCD) Sub-Team

My current project is to create a gearbox that we could use to raise and lower our Power Cube scoring mechanism. My favorite part about being a part of ViperBots Valor, is that we are constantly trying to come up with innovative solutions to our problems and in-game objectives. I am most looking forward to attending competitions this season, knowing other highly competitive teams will also be attending.



During the winter break Valor's Cole Ibanez and Gabriel Diaz entered and competed in a CADathon event. CADathon is a challenge in which teams of two people are given a challenge at 12:00 pm and have 3 days to completely CAD and design an entire robot. This was our very first time participating in a CADathon and we placed 4th overall!

*(See page 4 for the CADathon robot CAD).



Sachin Desai

Chassis Sub-Team

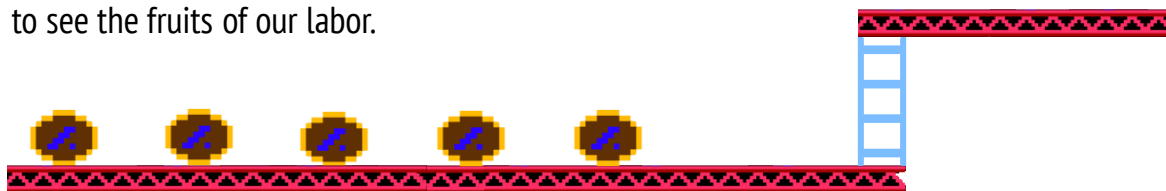
Currently, I am working on milling end plugs (chassis connectors) and cutting the belly pan (bottom plane of the robot) for our practice robot. Everyone on valor is super cool and great life long friends, while still being safe and technical in the shop. I can't wait to see the fruits of our labor.

Meet the Mentor

Kelcie Tiedeman

Programming / Controls Faculty Mentor

I got involved because I taught a few members of the team. A couple particular students asked if I was interested and so here I am today, mentoring ViperBots Valor! I work with the control sub-team (aka the dream team). I graduated from the University of Texas (Austin) with a Bachelors of Science in Mathematics. Now, I am currently in my 3rd year teaching. I enjoy watching the students participate in a program they are so passionate about. These students have so much drive and motivation. Its very inspiring to be around a team that strives to learn and work together to accomplish a huge goal.



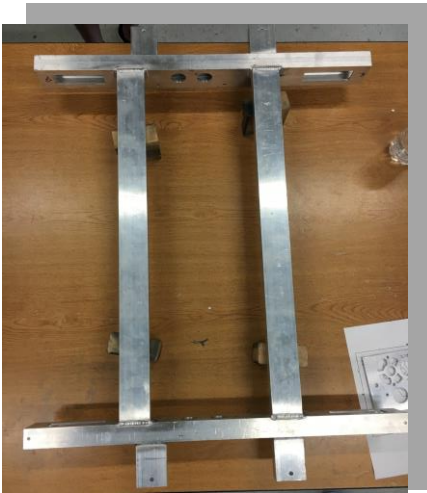
Sub-Team Updates

Object Collection Device (OCD)

Last week we focused primarily on designing and prototyping both an active top rolling intake and an active side rolling intake as a means to determine which of the two designs works best. After the team collectively decided on the active top rolling intake, we moved onto implementing a final design. Because a large majority of the intake structure is polycarbonate, we got a pretty significant head start on final assembly. Our goal is to have the full final structure assembled before the “active” components arrive so that, when that happens, we can jump right in to completing a full working intake as soon into week 3 as possible.

Above Chassis

On Saturday our sub-team worked on the CAD for the lift and the gearbox that drives it. We ended up having to fix our lift CAD by adding accurate holes, lift positions, and sprockets. Over the weekend we compiled a parts list to order. On Wednesday we started to print out part sheets so when we get our order in we will be able to immediately start manufacturing.



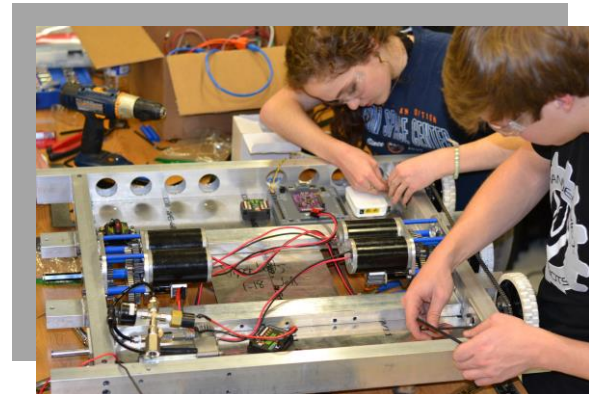
Chassis

Last week we were able to assemble our first chassis and transmissions. Once it's wired we can start running tests on the new shifting mechanism to ensure that we can shift consistently and don't have any reliability issues. This week we worked on creating the second chassis for the competition bot. We're still waiting on some parts but once they come in we can assemble the transmissions and begin testing with those as well.

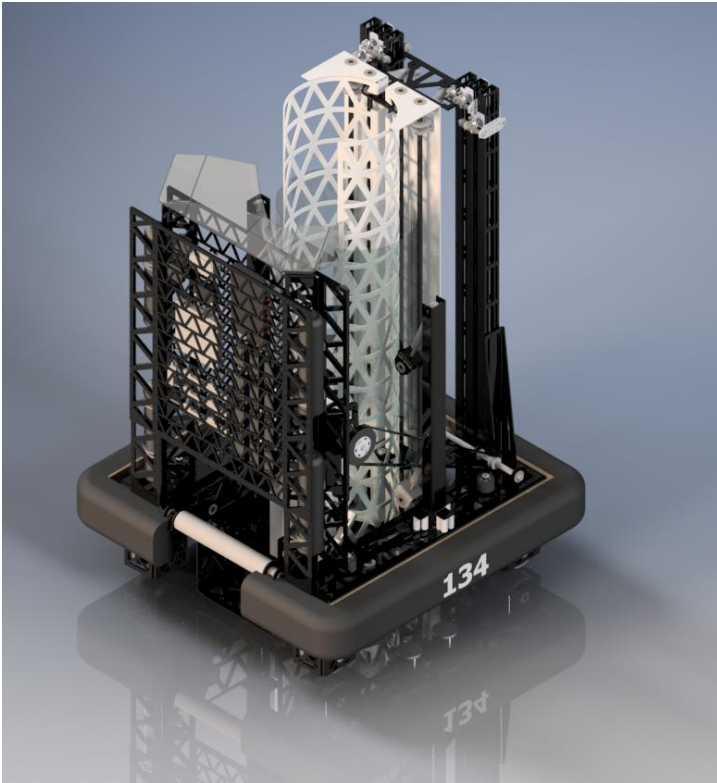


Controls

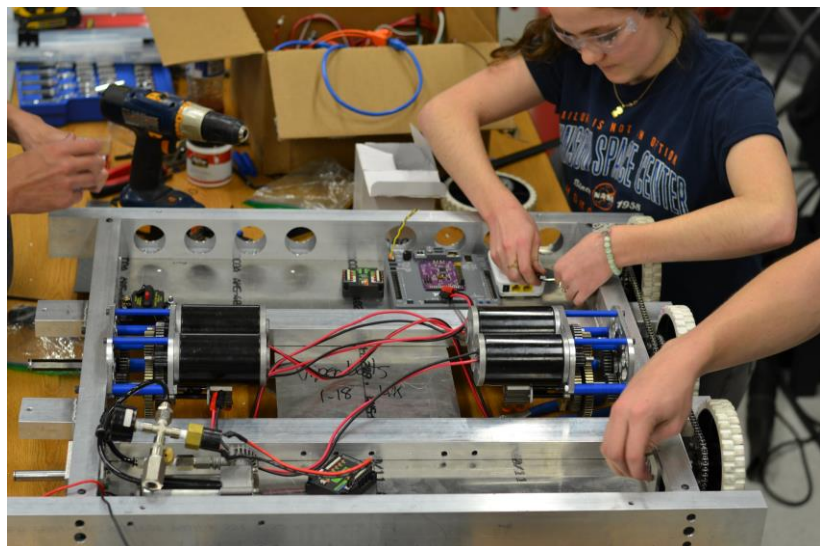
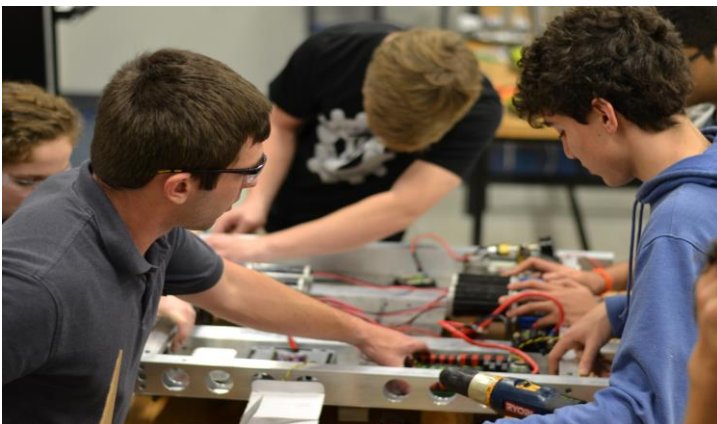
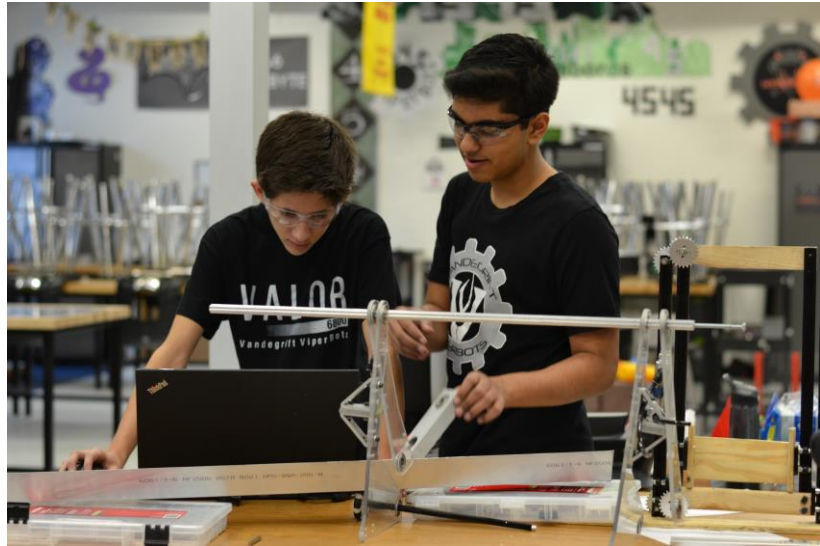
Last week, the software team was able to prepare the LabVIEW code for the competition/practice robots. We worked with our LabVIEW mentor Colin to setup better version control and management to get ourselves organized before we start wiring up and programming the robot these next few weeks. We plan on getting the practice robot fully wired up by the end of next week if the hardware team is ready in time. If this goes to plan, we will be able to start testing out our LabVIEW on the practice robot by the end of the week!



Pictures of the week:

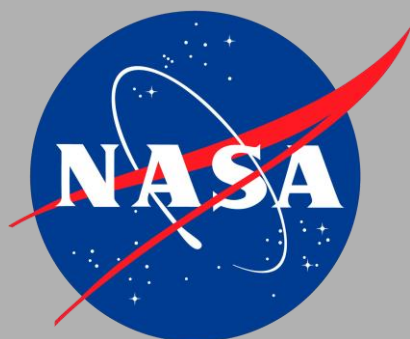


A CAD rendering from Cole and Gabe's robot from the CADathon competition.



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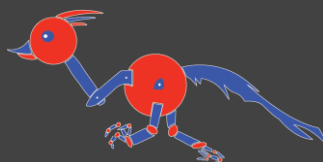
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