Julian Smith

While brainstorming for what I should design, I thought about how important the stability of a structure is so I knew that what I would be making would be to better the stability of the robots. My first idea was to make a type of vice meant to specifically hold C-channels and base plates in the area of the chassis where it becomes unstable to make it stable. I had then realized that it would just make building more convoluted and it wouldn't be needed. My next idea, which I finally settled on, was to make standoffs that were similar to nyloc nuts. They would have nylon in them to keep the screws from moving around and coming loose. I also wanted to have rubber on the ends of the standoff. The rubber would allow you to tighten the standoff even further. The importance of being able to tighten the standoff further is so if, for instance, the two C-channels that are on either side of a wheel begin to bend under the weight of the entire robot causing the c-channels to rub against the wheel, you could place one of these rubber C-channels opposite of the side that is bending inward and tighten it further than normal to make sure it keeps from bending.

I had used Tinkercad to make the 3D model of my idea. When I used it, the first thing I did was get the measurements of a two inch standoff. After having found the measurements of the object, I then began the process of making my object within Tinkercad. My first step was the make a standoff with the proper dimensions before doing anything to it. The second step was to show the rubber that would be on the ends of the standoff, so I changed the ends of the standoff from a gray color to a black color. Finally what I needed to do was to show was the nylon that would go on the inside of the standoff that is essential to holding itself in place. To do this, I simply put, on either end of the standoff, white circles on the inside of the standoff to signify the nylon.

As I was working with Tinkercad I began to realize how you need to think about what you are creating. You cannot simply have an idea and write it down, draw it, or design it; You need to also put thought into it as you are creating it. You need to look at your work from a critical standpoint and ask yourself what the flaws are in what you made and how to make it better. For my case, I first needed the measurements of the standoff before I could even begin putting my idea onto Tinkercad. I think I will continue to use 3D design software in the future for quite possibly any idea that I would want to make a model of. I find that creating even a rudimentary design still helps with materializing any idea. I feel that if I were to take up a career in robotics, architecture, or even something such as game design, it would be a wise decision to learn how to use 3D design software.

Online Challenge Autocad Design