**Making it Real CAD Engineering Challenge**

**Team 56445E**

**Identify why you created the part – what functionality are you improving or what issue are you solving?**

We are team 56445E and we made a 3D printed 90 degree standoff for our robot clutch because when the claw lifts up a piece at the top of the back snaps off so the 90 degree standoff helps it not snap off.

**How the new part would be used and how it fits into a complete robot design:**

So, the 90 degree standoff helps a robot by preventing a piece from snapping off of the robot and preventing it from tipping over because it was top heavy.

**Explanation of how we used Tinkercad and Ultimaker Cura to create our new part:**

We used Tinkercad to make a 90 degree standoff. We had to measure a real standoff first and understand the measurements of the holes in other pieces so the standoff would fit in the holes. Also, we had to know the size of the part that sticks inside of the holes.

After we created our part from Tinkercad, we exported the STL file from Tinkercad and then imported it to Ultimaker Cura. Finally, we used an NWA3D printer to print the custom piece out.

**Conclusion:**

From this project we learned that Tinkercad can help with almost any problem that gets thrown at you and you could just design a piece, print it out, and then you have a piece to help you out. We will use 3D design software in the future because it could help us out with projects, designs, problem solving, and even help people that have a disability. This software will help on a competitive robotics team because you could make parts that were never created before and you could make useful parts and materials that were never thought of before. Learning 3D design software will help us in our future career paths by letting us know how to make different things that we don’t have access to and we will know how to teach others what we know and how they can do it too.



