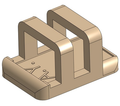
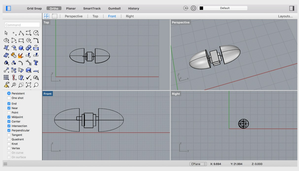


Machining & Robotics

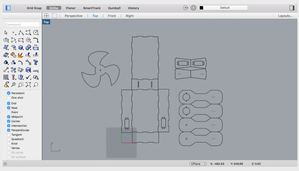
In the realm of product design, I have experience with several programs, such as Unity, Fusion 360, Rhinoceros, and Unity. In machining and product creation, I have experience in work with mills, lathes, laser cutters, 3DP, etc. Below are some examples of my work.

Egg-Bot

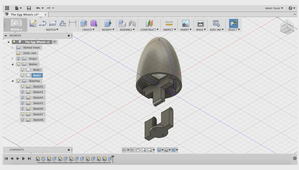
My 'introduction to robotics' project was centered around creating a robot fit for combat/defense and exploration in uneven terrain. The design concept was that the robot would be able to overcome a variety of obstacles through its egg-shaped design, as it would be impossible to topple it over and place it in a situation where it wouldn't be able to continue moving.



The initial concept design.



Laser-cutting pathways for creating the home compartment and arms + blade for the combat aspect.



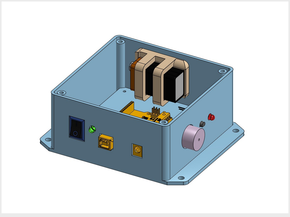
The final design for the 3D printed 'wheels' and hinges that attach to the laser-cut compartment.

Battery Holder

A more recent engineering design project of mine was for a class titled EK131 ("Introduction to Engineering: Hands On"). The task was to create a digital twin of a provided temperature sensor enclosure, as well as develop from scratch a 9V battery holder.

The battery holder had to be secure so that the battery could not become undone and damage other parts within the compartment, but also open enough to allow easy accessibility.

Below are some shots of the final battery and enclosure design.



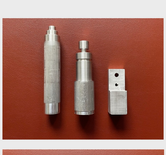
My first attempt at printing out the battery holder design was a couple of millimeters too large, so the battery shook around and was prone to falling out.

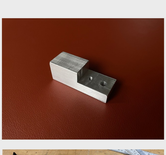
On the second attempt, the ridge at the front of the holder (which prevents the battery from falling out) was too high; I was able to insert the battery but was unable to remove it.

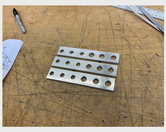
After adjusting the size dimensions and lowering the ridge, I printed out the holder and it worked perfectly. Here it is below.

Machinery

Through working at EPIC-BU, I have been able to grow my product design skills. While assisting visitors at EPIC has helped me improve my previously-gained abilities - such as laser cutting and 3D printing - training in the use of subtractive manufacturing machinery - such as the mill and lathe - has opened up new possibilities for my creations.







Drill Punch Holder

Below is a drill punch holder that I designed and manufactured for EPIC.