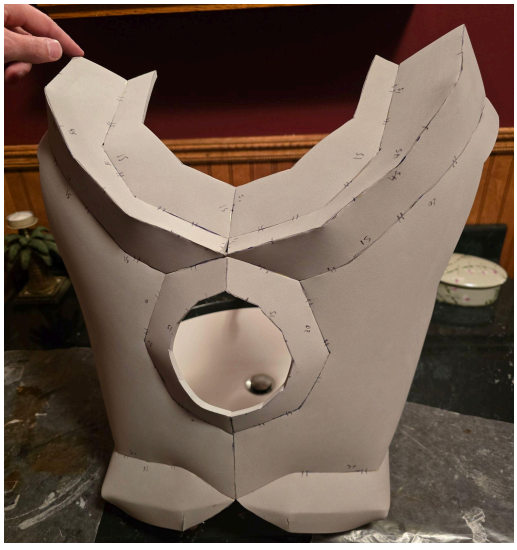
Blood Torva

By Hasen.3D

To make the Blood Torva armor, I intended to use the model files from the game. However the first hurdle was the fact that the render engine in the game smooths the models greatly. My pipeline was as follows.

I used meshmixer to scale the model with a 3D scan of myself as a reference and to remove erroneous faces. For EVA foam parts I created paper patterns with pepakura, but limited the number of hard crease folds and cut it in fewer pieces to utilize the flexible nature of the foam instead of making many facets. Hard edges were reserved for dramatizing the shape.

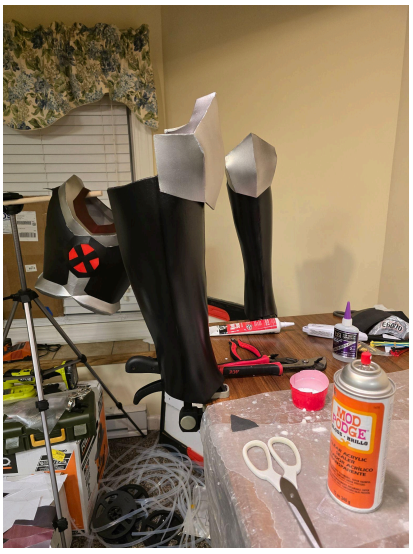
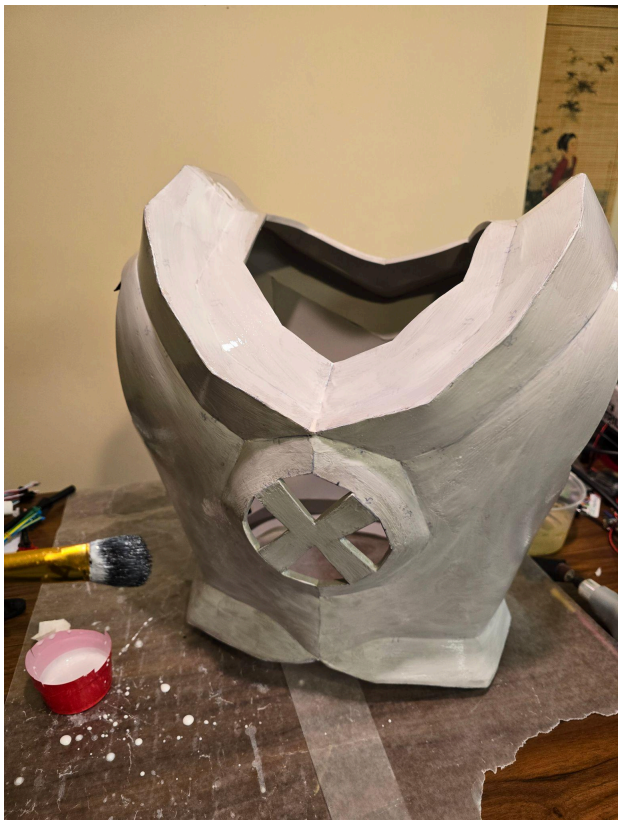
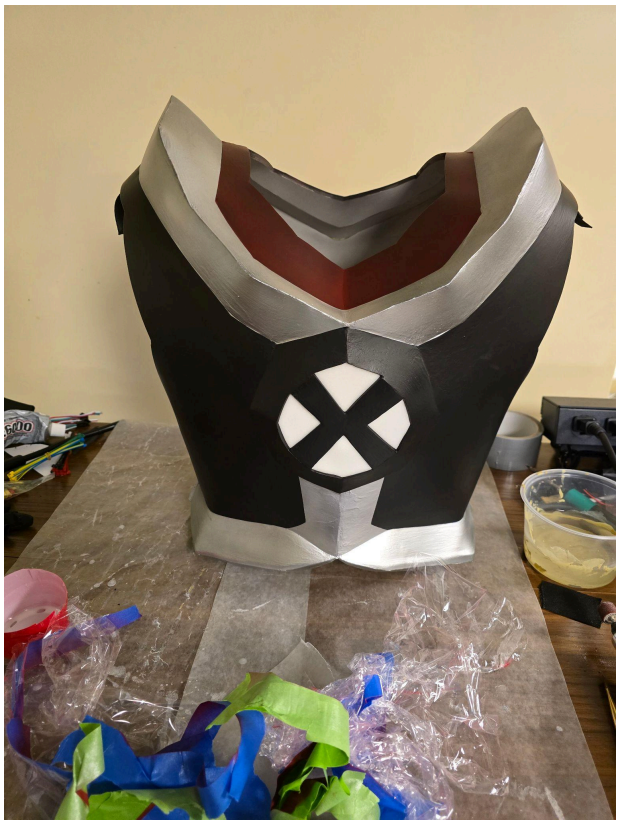


I continued the process for the placard, tassets, and the part of the pauldron that was foam. Utilizing countless bevel cuts, combining 15, 30, and 45 degree angles, both valley and hill style.


The head on the pauldrons were 3D printed and joined to the foam with E6000. Other 3D printed parts include the helmet, the collar of the cape, and the base of the boots. Their models instead were moved to blender where they were modified and solidified to create volume for printing. As the original material is fairly low detail, I opted to keep surfaces relatively smooth.


I used Kamui Cosplay's shin armor pattern as the base for mine, and combined them with the knee guards. I filled gaps with kwik seal, dremeled edges and seams, and primed with flexbond.

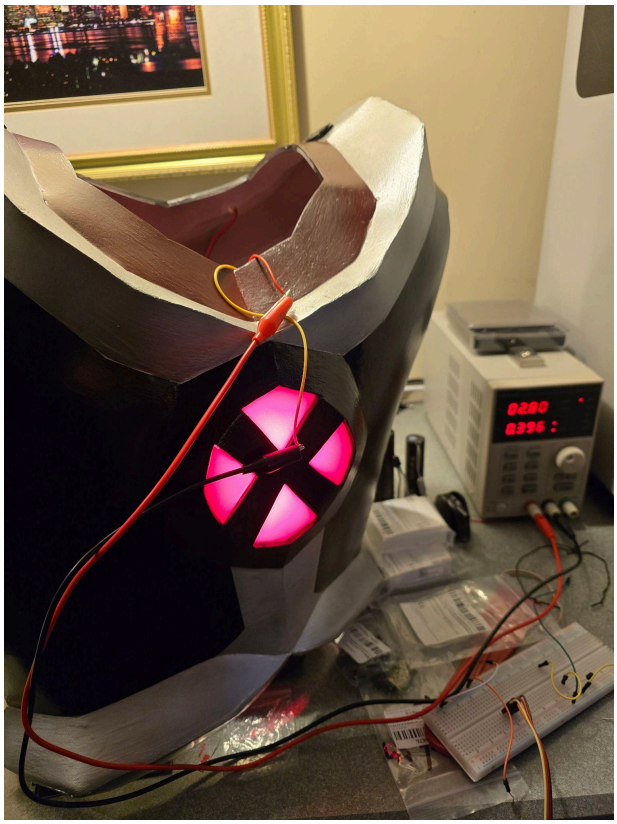


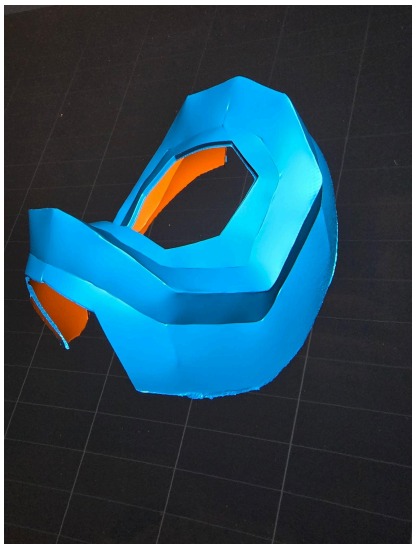
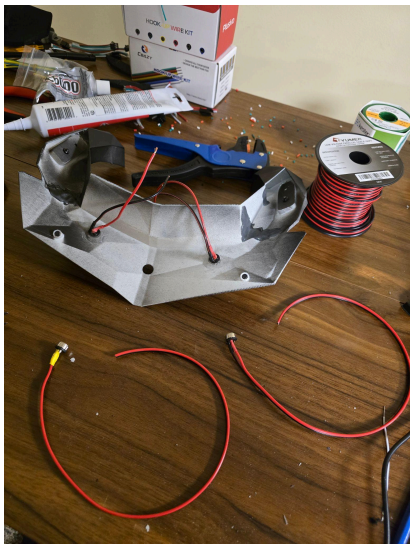
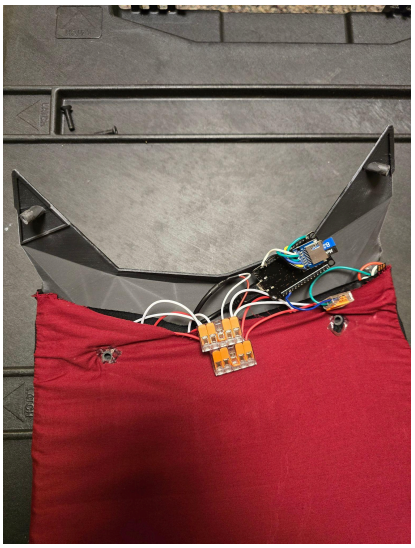
I airbrushed the black base layer and then the aluminum metallic, then finished off with touching up any overspray and a coat of mod podge acrylic sealer. I kept the detail simple to not deviate too far from the in game design. I patterned the loin fabric, folded over the seams twice and fitted magnets so they could easily be removed and adjusted on the placard. The tassets are attached with magnetic snaps and the tasset buckles at the back.



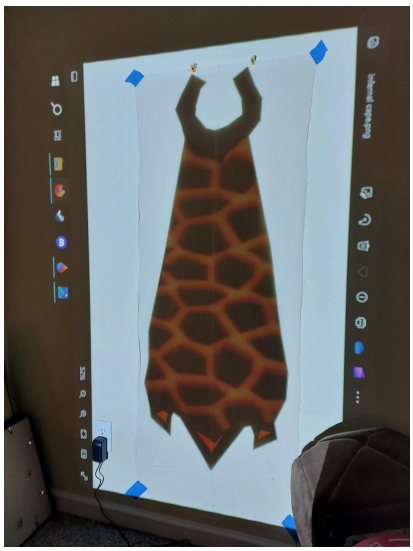
The chest armor and eyes in the pauldrons each have a 10cm LED filament. The light is allowed to bleed from the pauldrons intentionally for dramatic effect.

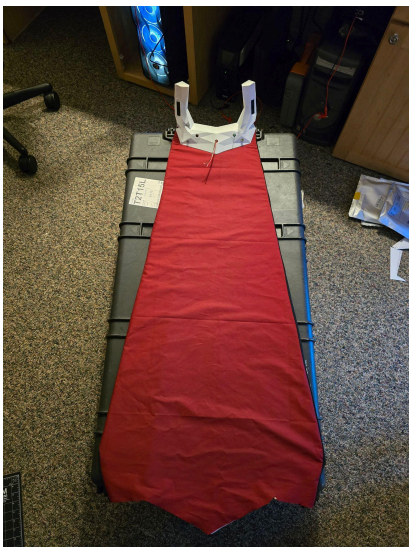



For the collar of the Infernal Cape, I 3D scanned the real world armor I made back to a mesh and performed a boolean subtract operation to remove the profile of the armor from the collar in Blender. I then solidified it and exported to Fusion where I added the holes for power connectors and mounting magnets and standoffs. I 3D printed the collar, smoothed it with filler primer and sanding, then sprayed black and sealed it with Rustoleum 2X product.

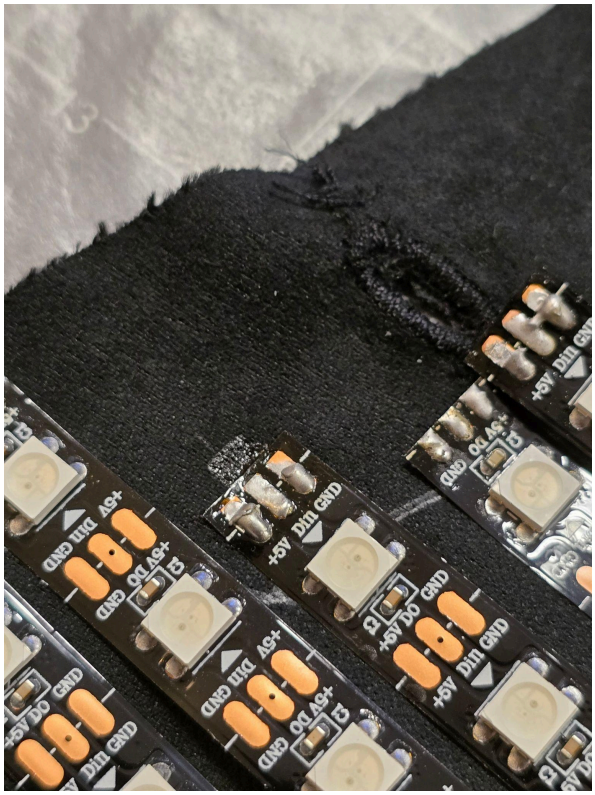




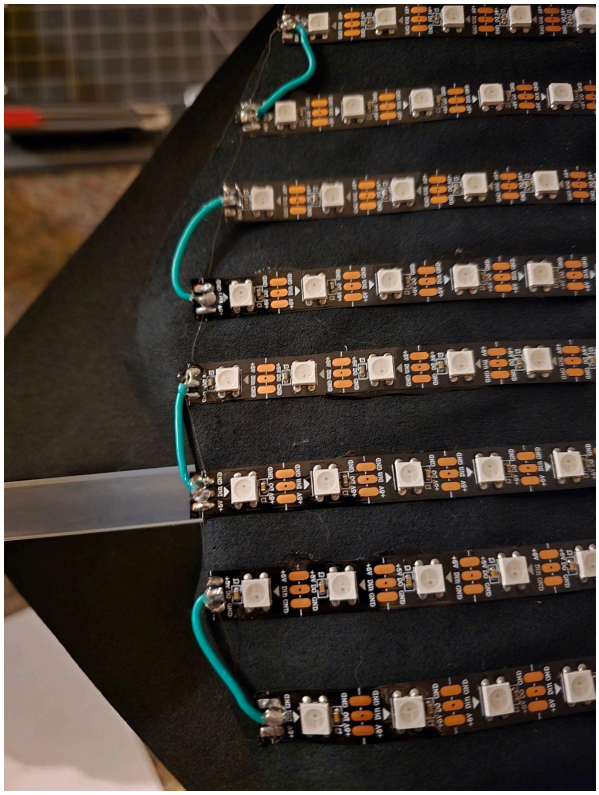
The cape was patterned using a projector, which was used for all the layers involved. It consists of the red exterior lining, a black lining to which the 1500 LEDs are glued to, the 6mm Plastazote layer for diffusion and the, and the black mesh on top to black out the foam.

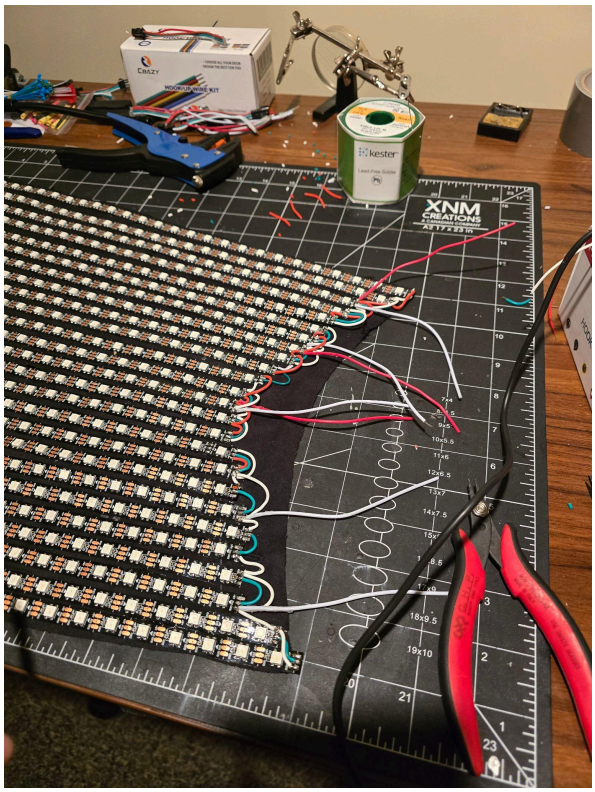


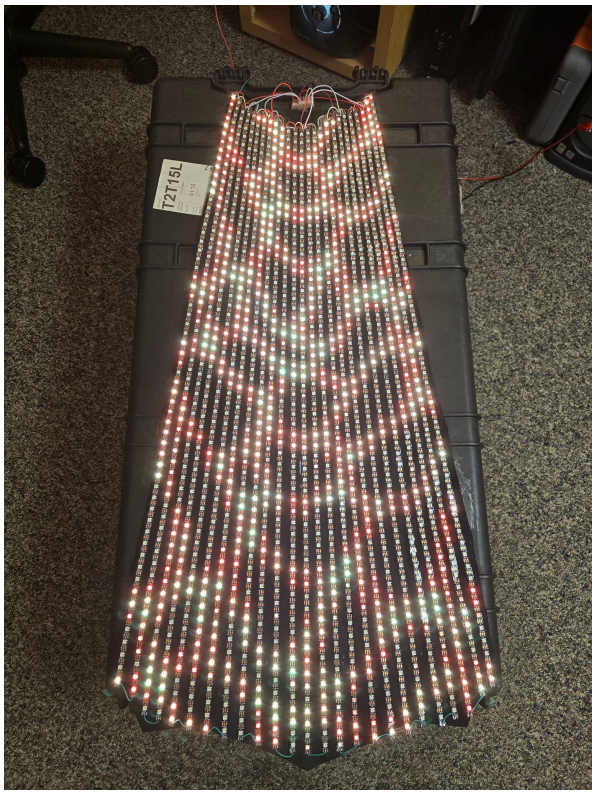


I used the button holer attachment on my sewing machine to secure the mounting point of the fabric. I used grommets to secure the mesh. Over 100 solder joints, many of which were 2 or 3 wires to a pad, had to be made to power the 25 meters of Addressable RGB strips in the cape.

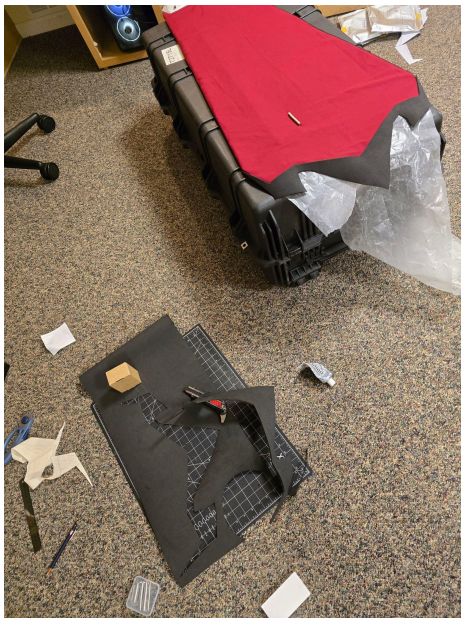




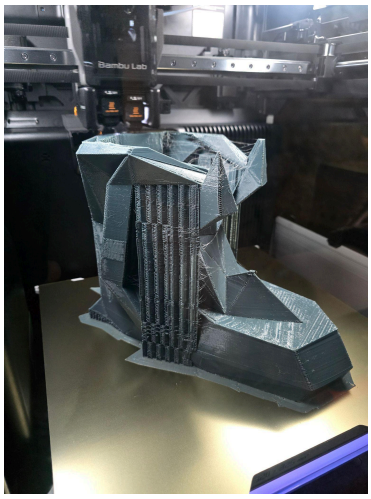
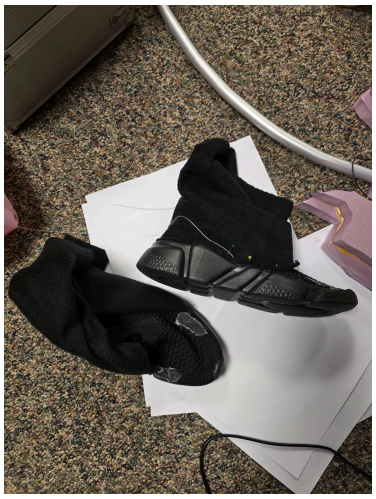
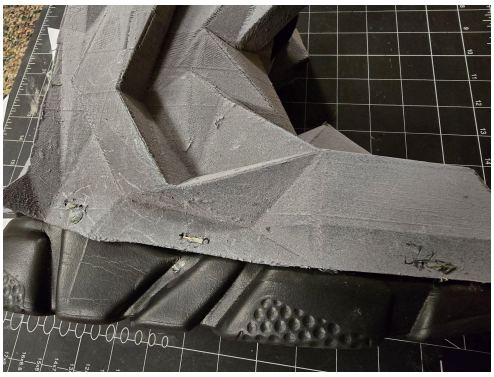




The cape is controlled by an ESP32 which I programmed to play GIFs from a micro SD card on the 25x60 matrix. I powered it using a 144 watt hour LiPo battery that fits in the chestplate and a 5 volt 15 amp automotive buck converter to deliver the up to 75 watts the LED matrix is capable of drawing. The sheet of plastazote helps diffuse the light and I added the rest of the detail on the bottom with more EVA foam and some gel filters.

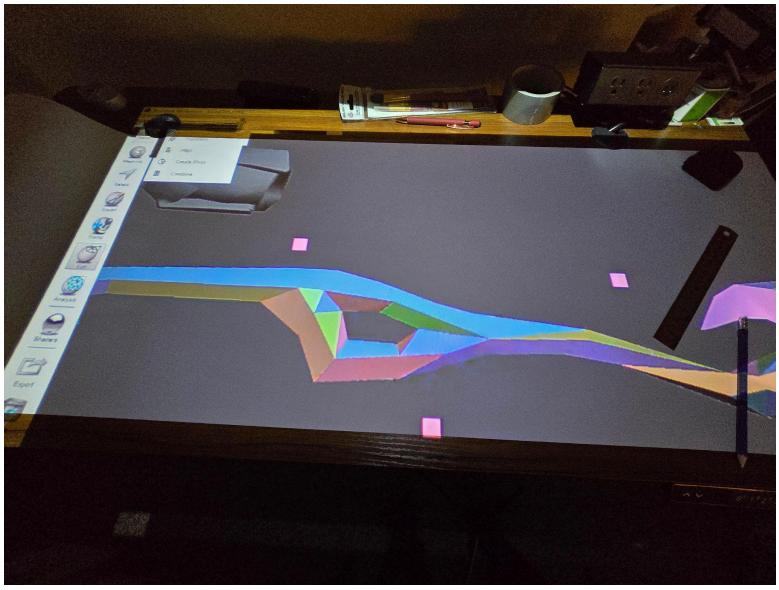

The structure for the boots were printed in flexible filament. After smoothing down the edges and supporting material left overs, I punched holes towards the bottom with my soldering iron so that I could stitch in the base shoes. I hand stitched a lining of fleece into the shoe to use as the lining of the boot before stitching the boot and gluing the fleece to the inside of the boot.

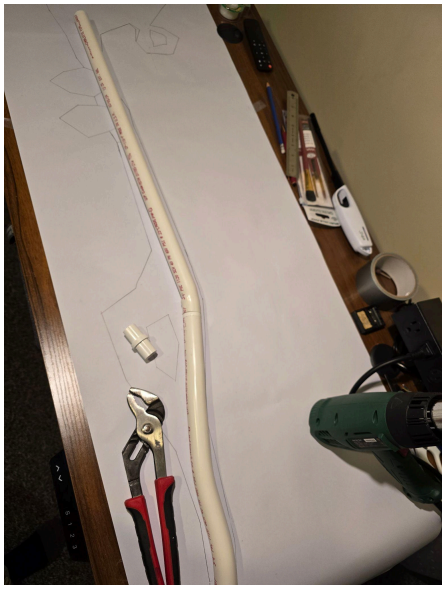




I dyed some of the grey pleather green and patterned the faces of the boot using painters tape. Some faces were finished smooth and painted, others were covered with pleather. The edges were lined with leather strips, the gems and fangs hand painted and lacquered.

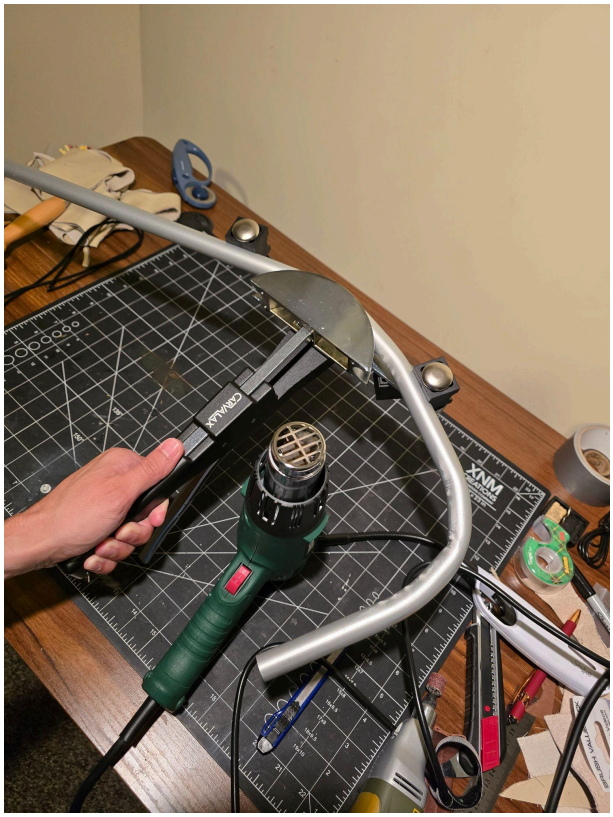


I patterned the Scythe by projecting the profile onto a roll of paper. Initially, my plan was to bend a PVC pipe to get the shape I wanted and carve insulation foam around it, but I was not a fan of the weight and thickness of the PVC.



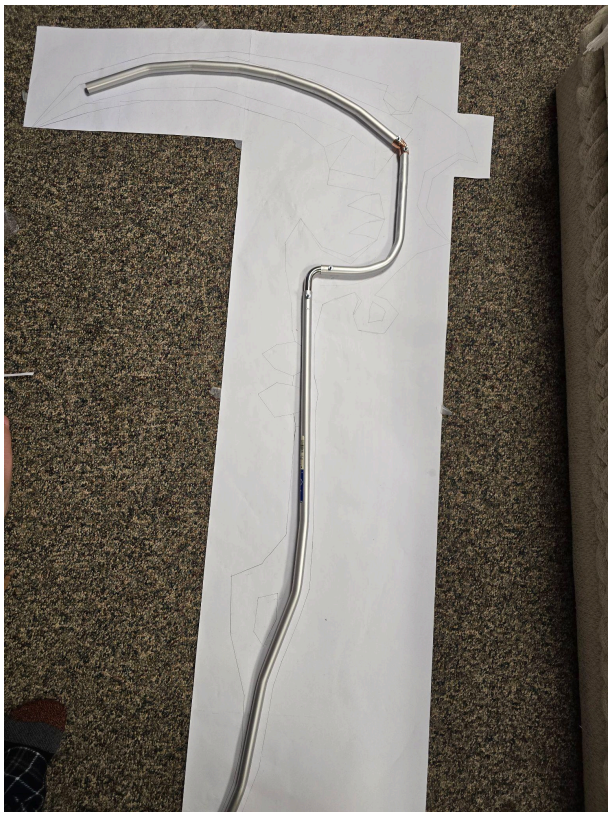


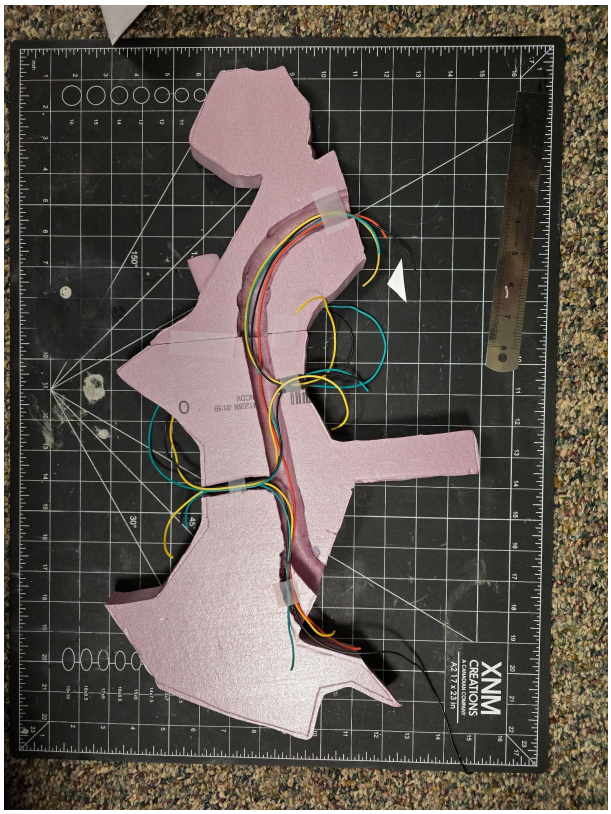
I managed to find a 3/4 inch aluminum tube that was far lighter and stronger, bent the pipe to shape, but oh no! It broke! I needed fittings for the tighter bends and learned the hard way that stainless steel is extremely difficult to drill through, even with the proper bits.



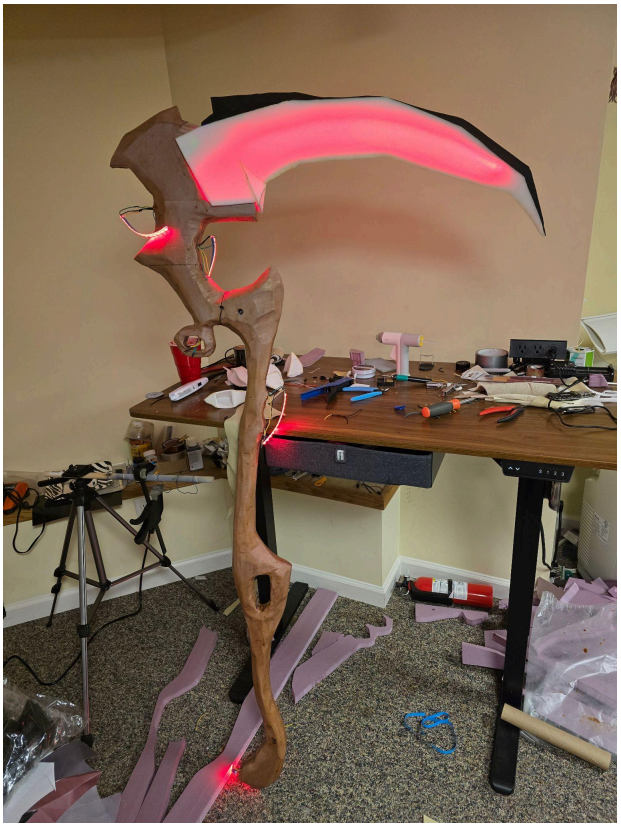
The time and energy sunk into the aluminum was worth it,simply for the extra insulation foam I would be able to remove from the final shape. I cut according to the pattern with a hot wire

cutter, externally for the profile, and internally for the pipe and wire channels. Then I inserted the wires and sealed both sides together with wood glue. It can be disassembled at the first bend.





Once it dried, I carved the true shape with the hot wire cutter, then used my dremel and angle polisher with sanding discs to smooth it. After that it was sealed with waterproof wood glue and it was time to attach the switch in the hand guard and the five LED strips.

The blade is also removable to access the micro controller and battery. It presses around the body and locks with magnets. I wrote code to wipe the LEDs to red smoothly when the switch is flipped on. I then surrounded the seams with foam clay, primed the foam with flexbond, and began painting. The base coat was black on everything but the plastazote. A transparent carmine colorways airbrushed on all gems and blade, with a two tone on the blade.