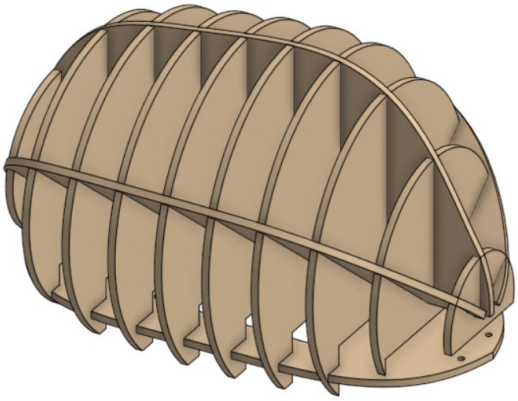
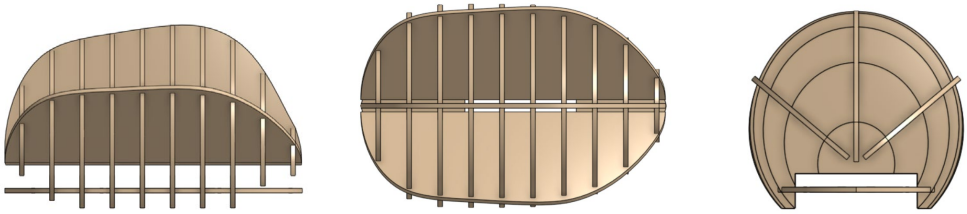
Hedgehog Assembly Instructions

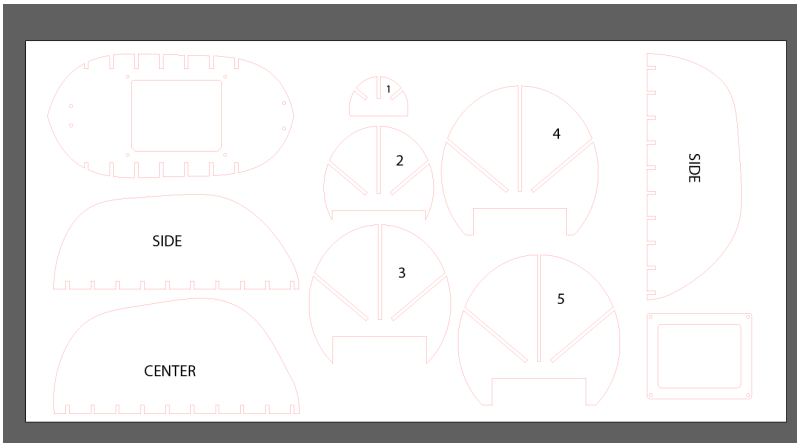
Last updated: 3/29/2022

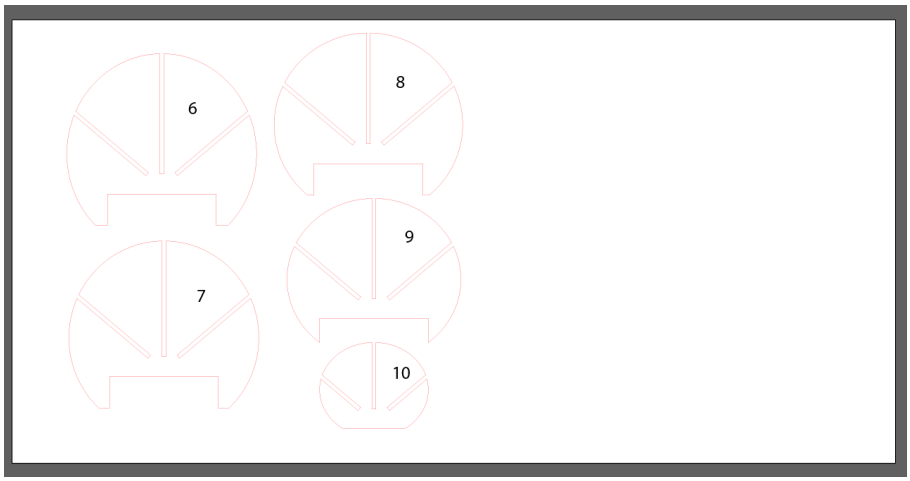
The Hedgehog robot can be built out of a laser-cut shell. This is a structure with planes cut from the hedgehog cross-section with spines holding it together. Finally, a bottom plate is where the hardware can be mounted. A CAD model of this assembly with different views is shown below.



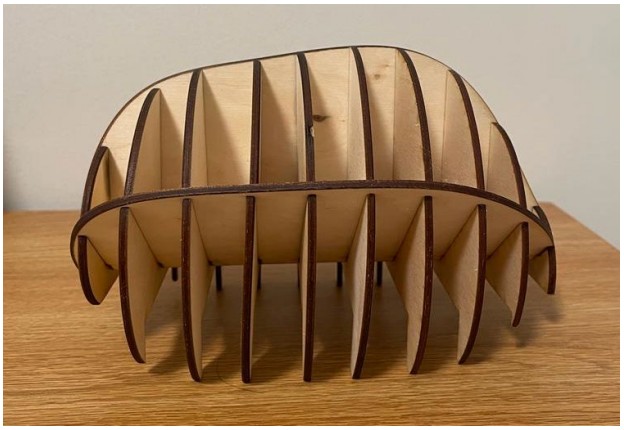


In order to make this structure each of the parts for laser cutting have been included in the github repo under Hedgehog/Laser cut shell/Individual DWG files. Additionally two illustrator files have been added under Hedgehog/Lasercut shell/Arranged Illustrator files. The illustrator files have all the components arranged on a 24x12in artboard for easy laser cutting.

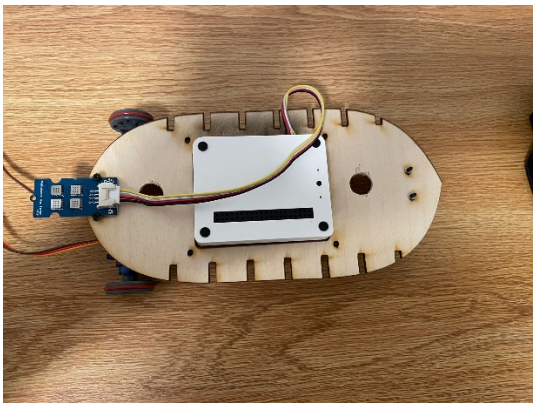


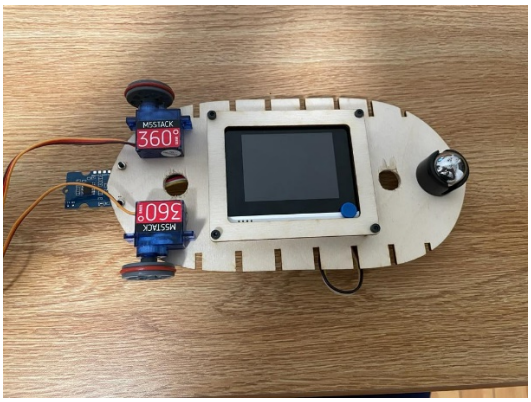


The following figure shows what the structure looks like without the bottom plate added:



The bottom plate can be assembled to hold the caster wheel in the back and the smell sensor in the front. The WIO and battery can be slid in the square hole and secured using the laser-cut WIO plate and some screws. Finally the right and left servos can be hot glued in the front.

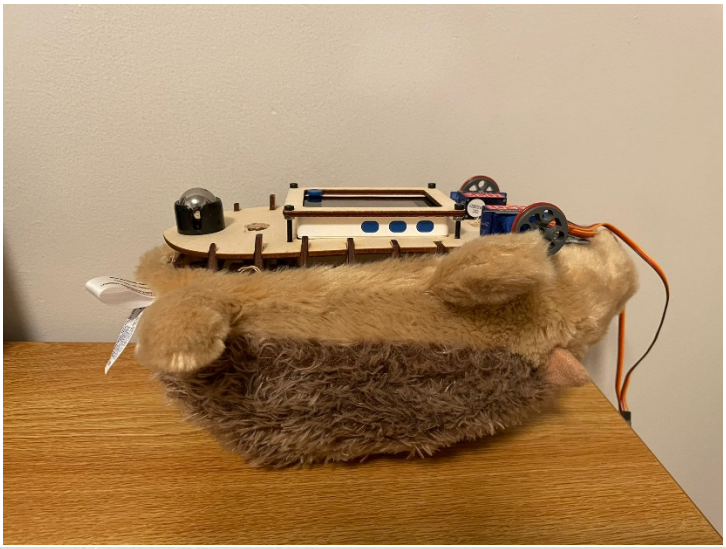




The WIO screen faces downward under the bottom plate whereas the battery rests on top of the plate inside the hedgehog body.

A hole needs to be cut on the bottom of the hedgehog toy following a similar shape as the bottom plate. The stuffing can then be removed from this part. The stuffing in the nose is separate and can be left in. The shell can then be inserted in the hollow toy.

The hedgehog shell can then be slid on top of the bottom plate completing the assembly.



If there are any difficulties with the assembly. I can be contacted at aashir.jalal@tufts.edu