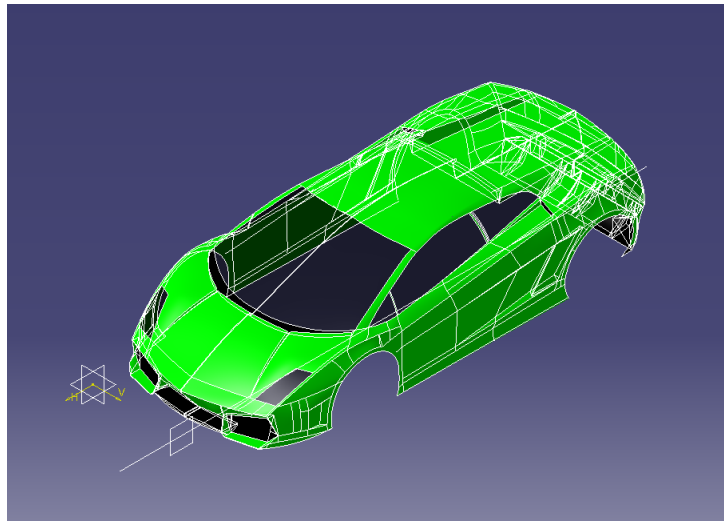
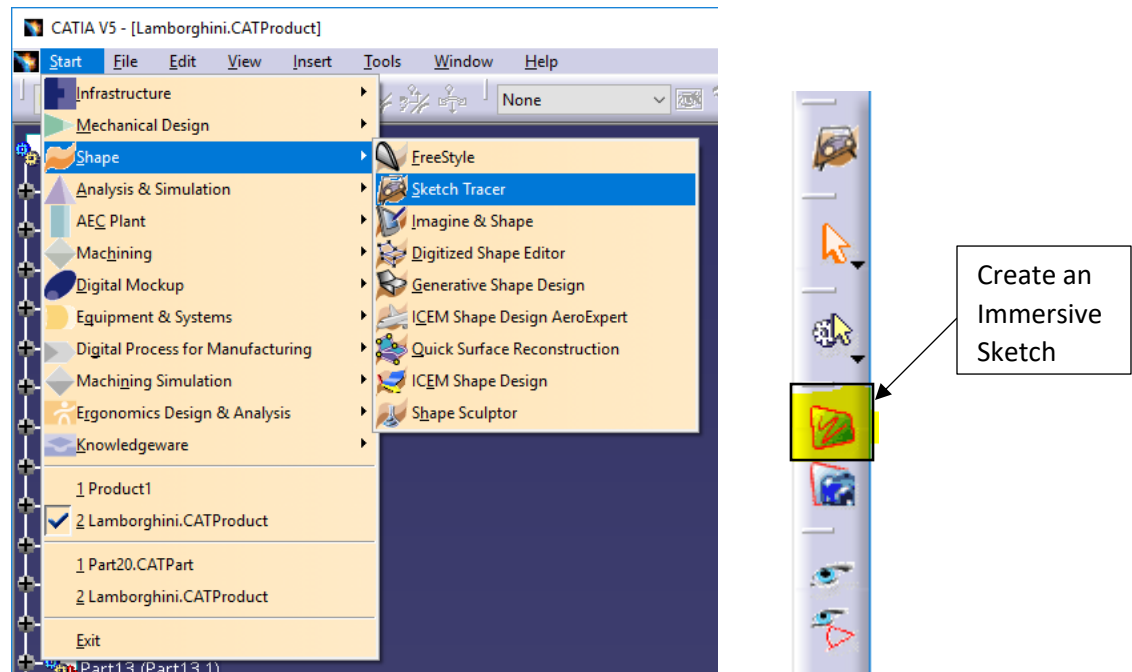


2011 Lamborghini Gallardo
Quinton Reese and Nicholas Tobe
ME421 CATIA
Fall 2017

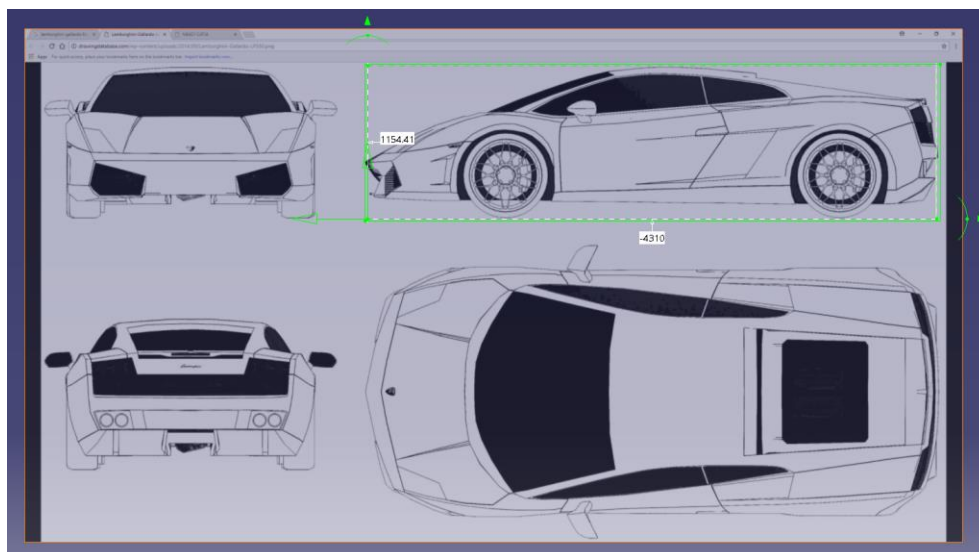


I. Sketch Tracer

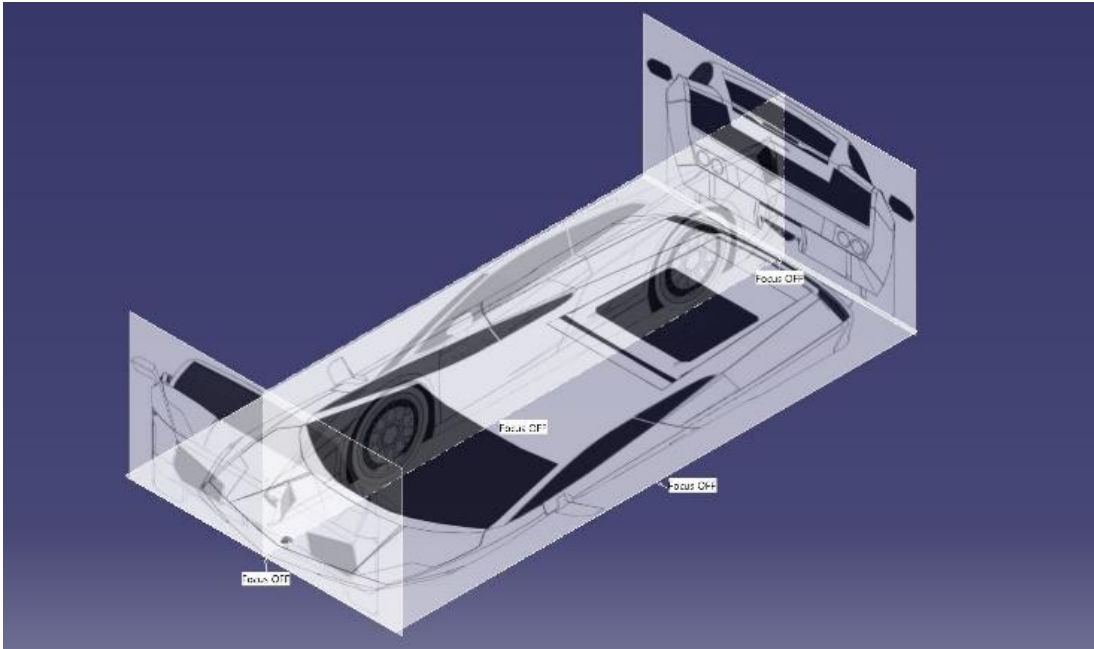
The drawings selected for the surface model need to be imported and scaled in CATIA. Images can be imported into CATIA through the Sketch Tracer toolbar. This toolbar allows you to Create an Immersive Sketch from the highlighted tool below



With the image(s) imported they can then be scaled. In the image below the dimensions along each of the dotted green lines needs to be the same for each view. This dimension keeps all of the views in the same scale. The origin of the axis also needs to be noted when importing the views as this is where the view will be placed in relation to one another. The excess of the drawing can be cropped out with the placement of the solid green lines.

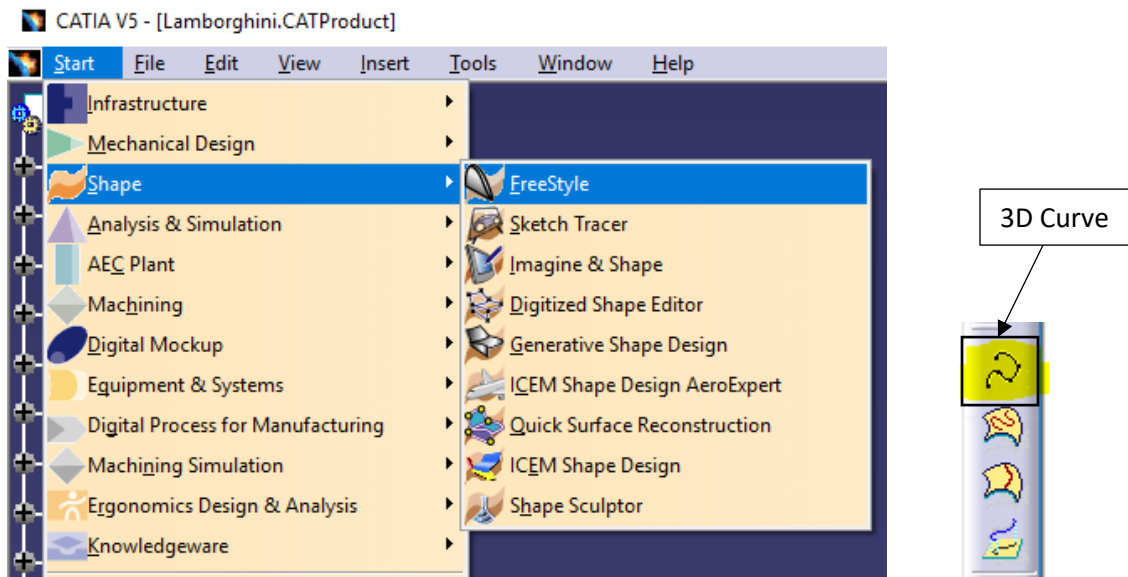


Once the views have been imported into CATIA, they can be dragged into position to create a multi-view image that can be used to reference for sketches.

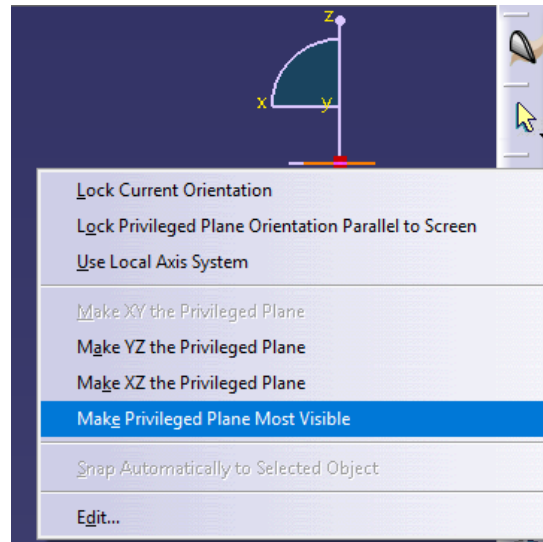


II. FreeStyle

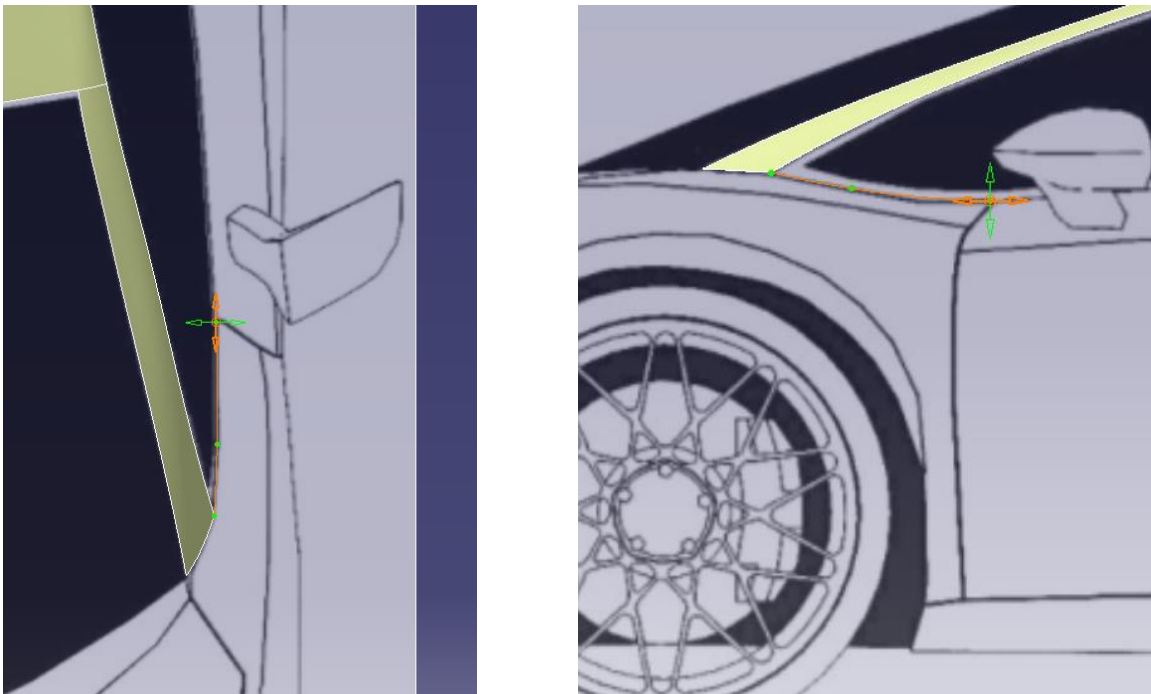
The main tool used for this project was under the FreeStyle toolbar. The 3D Curve tool was used to create all of the eccentric shapes on the surface of the vehicle.



When using the 3D Curve tool, it is important to right click on the axis in the top right corner and select the option to Make Privileged Plane Most Visible. This allows the user to change the location of points created with the 3D Curve tool to match up with the different drawing views.



3D curves can then be created while set to one view and once the curve aligns with that view, another view can be selected and the curve can be matched from that view. This allows the curve follow the body line of the car in multiple dimensions.

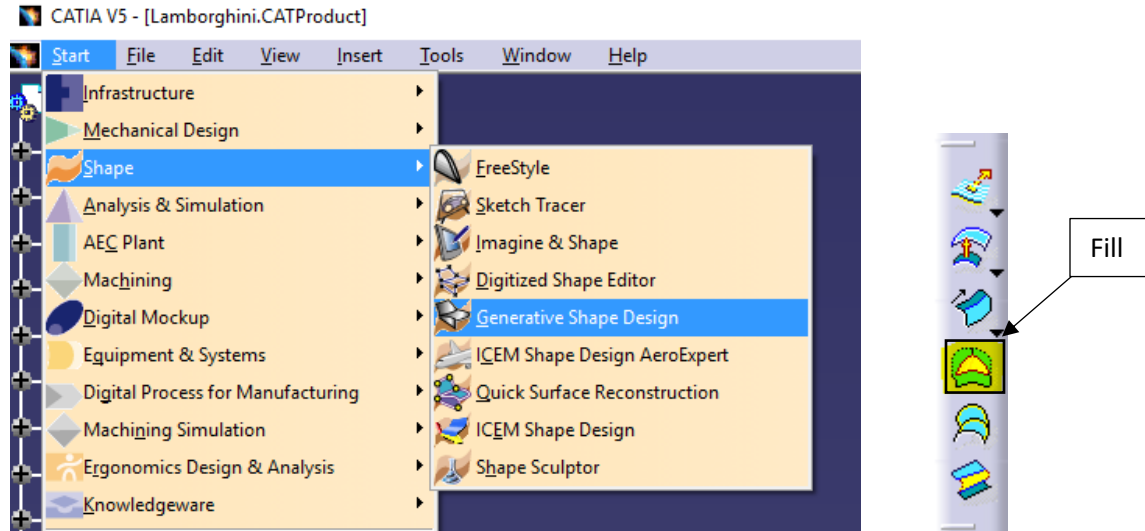


For some areas on the vehicle multiple curves may need to be used along the same body line to create the sharp corners that are desired. Additional points can be added as well to create a defined curve that can follow an eccentric body line. It is important to check the front, top, and right views to ensure that the curve created is correctly matching the drawing of the vehicle.

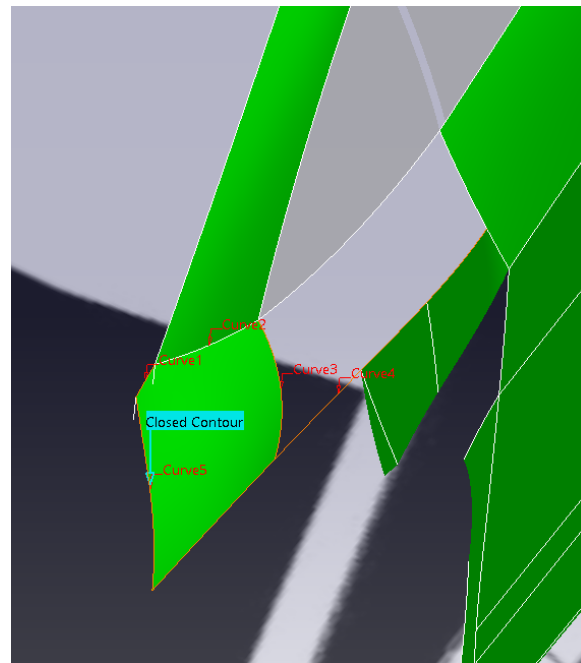
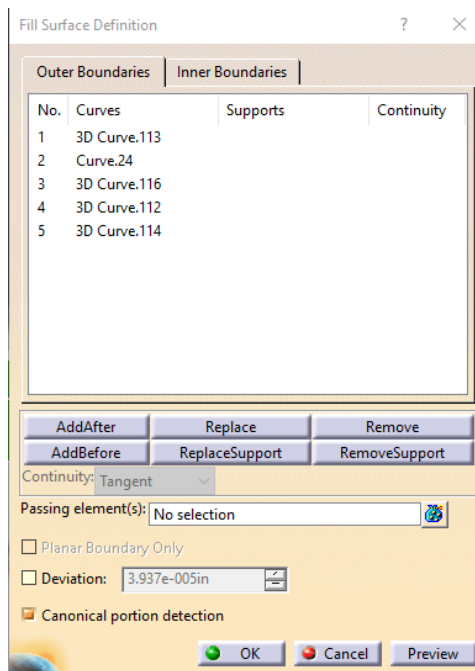
Once there is a completed outline for a body panel, the outline can then be filled in to create a surface.

III. Generative Shape Design

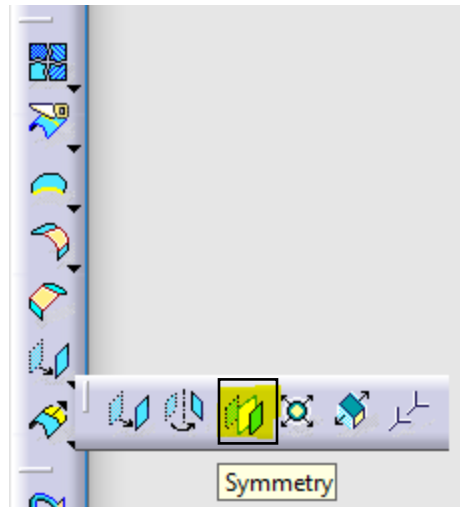
With an outline of a contour created out of 3D curves, it can be filled using the Fill tool under the Generative Shape Design toolbar.



When the Fill dialog box is open the curves that close the desired surface can be selected. Any curve can be selected as the first curve, but the next selection must be touching the previous. With a closed contour selected the surface can be filled. After a surface is filled the color of the surface can be altered by right clicking on the surface and selecting the properties.

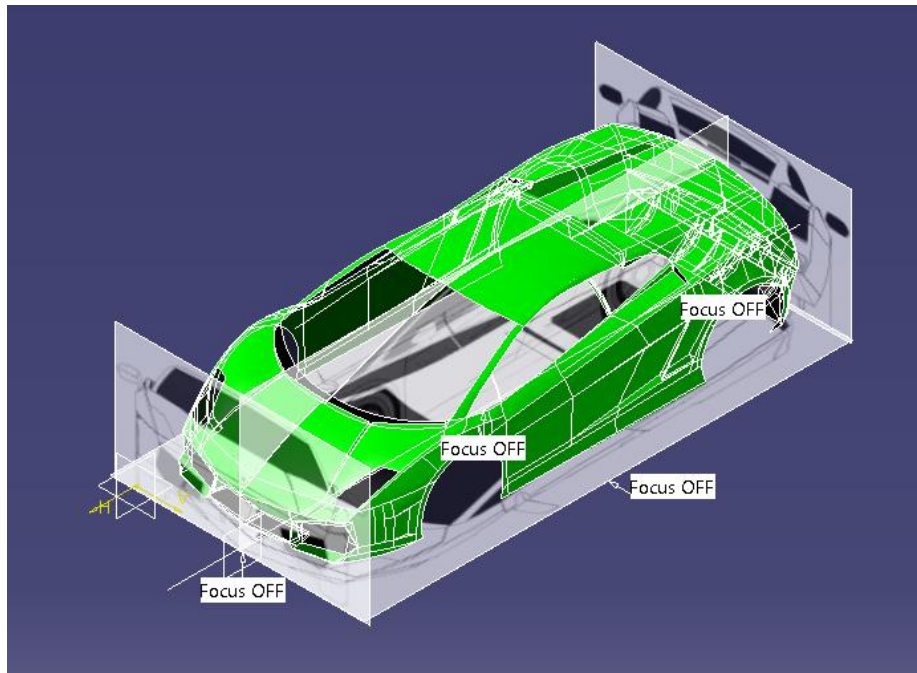


After creating all the surfaces for one half of the vehicle, they can be mirrored using the Symmetry tool.

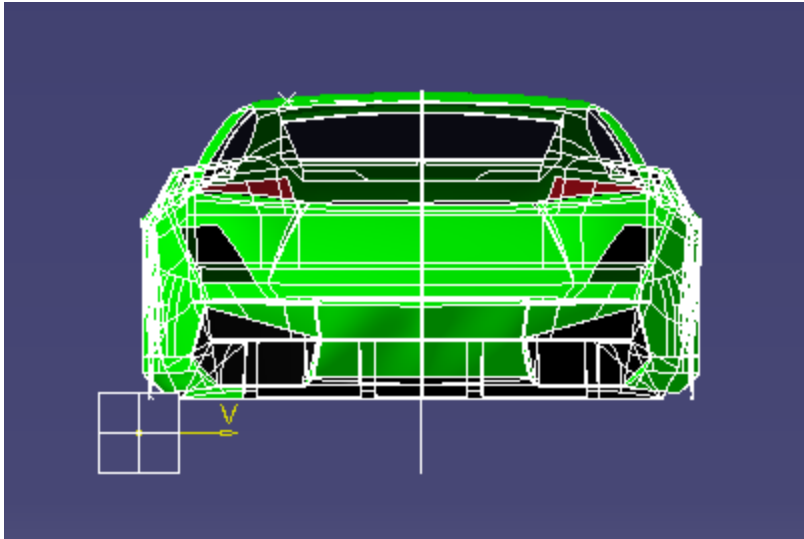


Select all of the desired surfaces to be mirror and then click the Symmetry tool. The dialog box will open for the tool and a reference to create the symmetry about must be selected. For this model a plane parallel with the xz-plane was created. This plane was in-line with the centerline of the vehicle to ensure that the mirrored and original half will match up.

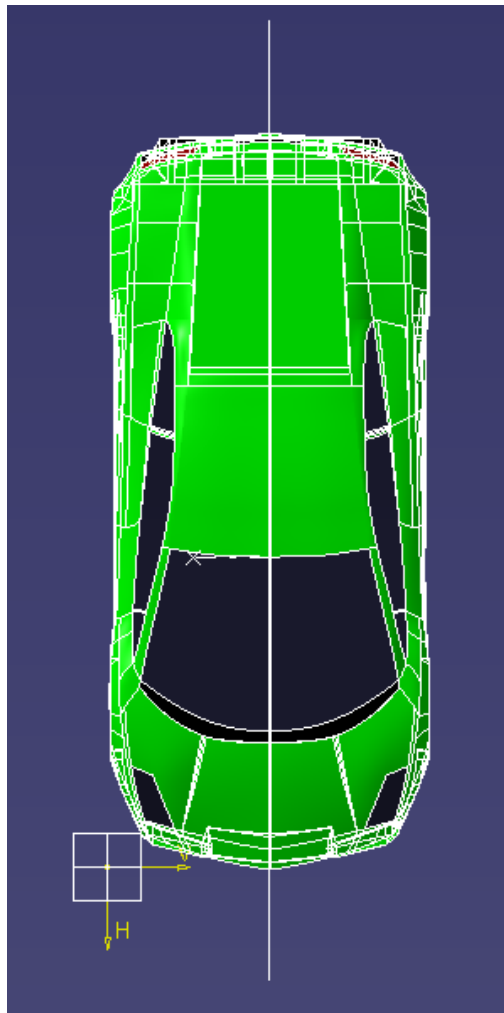
IV. Final Product



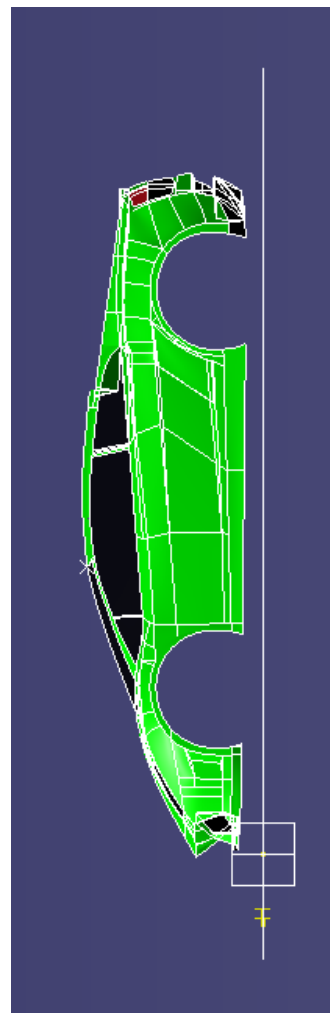
Isometric view with imported drawings



Front View



Top View



Right View