# Personal CAD Project: Tennis Racket

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**Figure 1:**

**Source:**
http://www.tennis-warehouse.com/Babolat_Pure_Drive_Roddick_Plus_2012/descpageRCBAB-BPRP13.html

**Figure 2:**

**Figure 3:**

**Figure 4:**

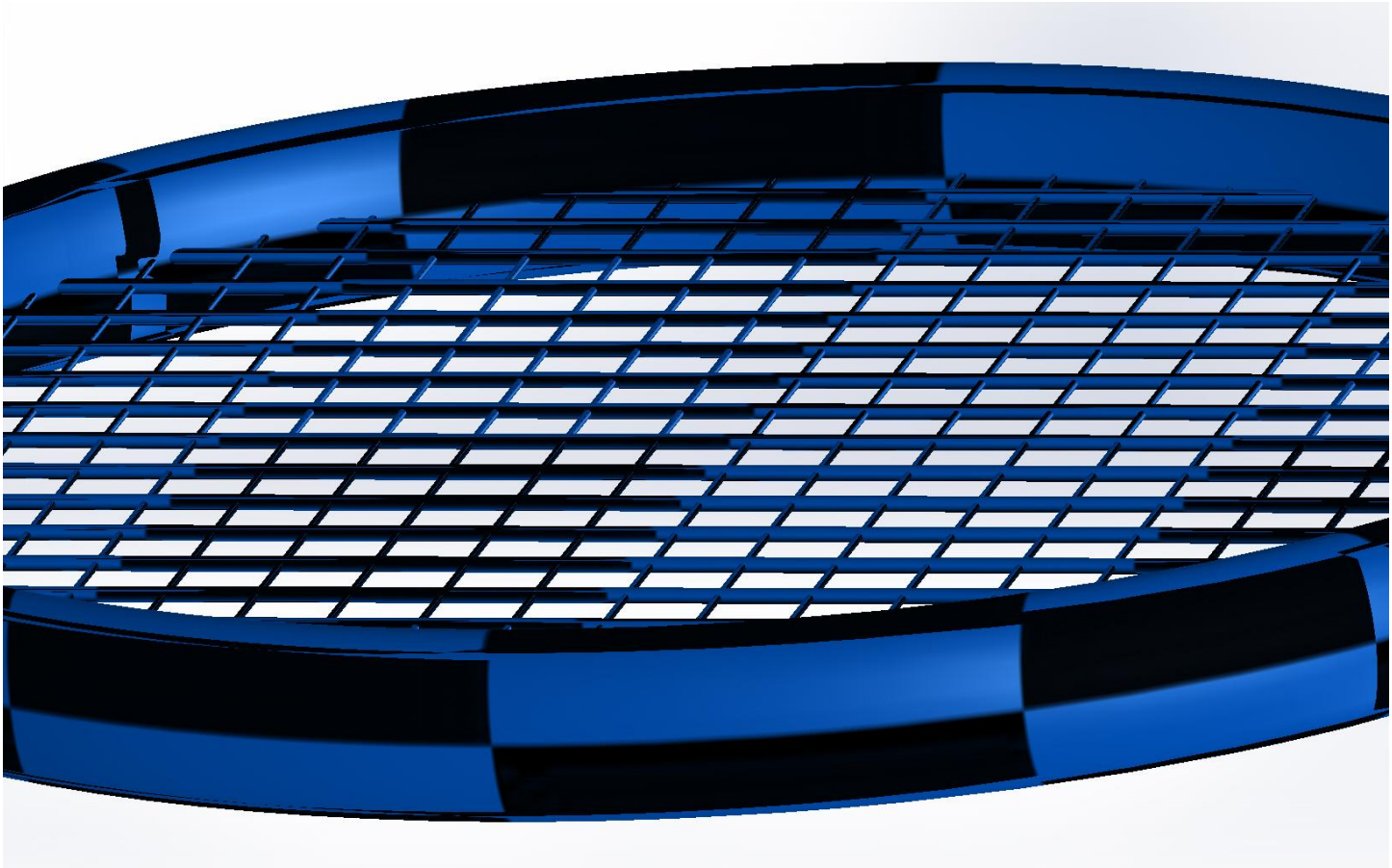
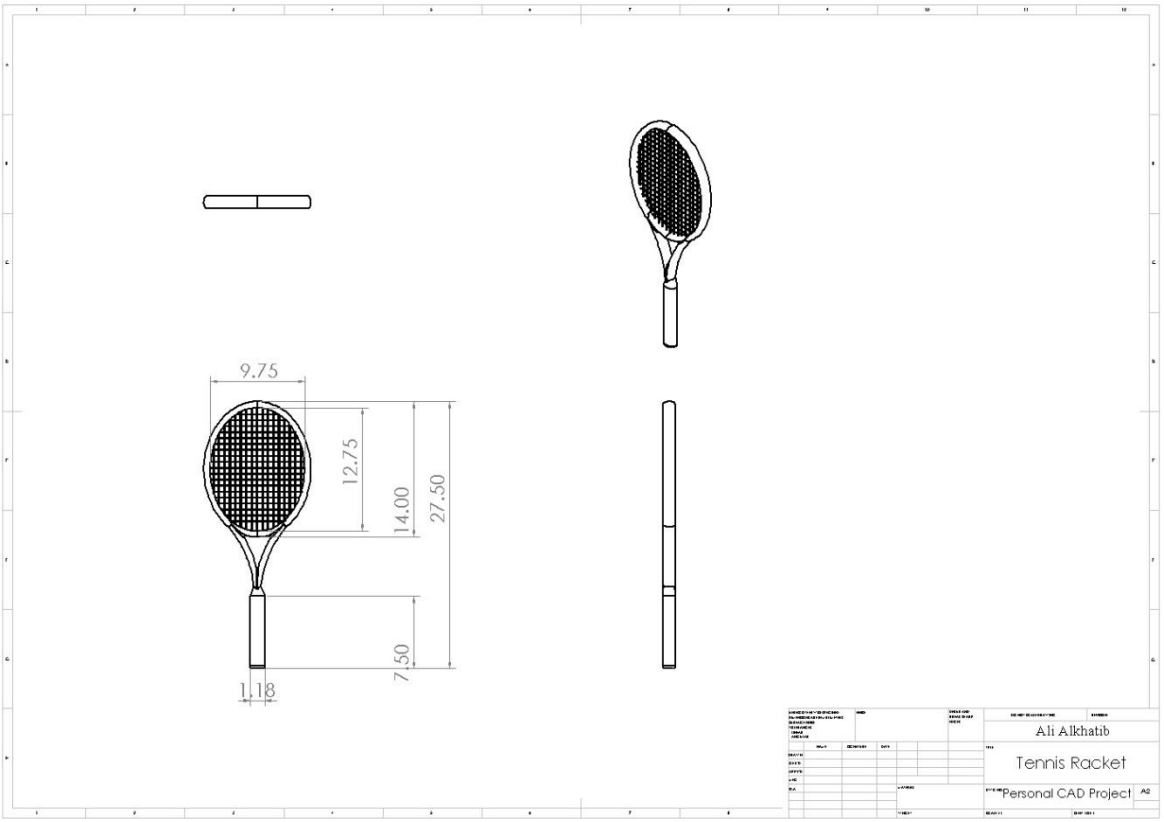


**Figure 5:**



Growing up as a kid I loved playing tennis, with dreams of someday becoming a professional tennis player. However, as I grew up, I soon came to the realization that my dreams would most likely not come true. Finishing up my last tennis season in high school made me realize that even if I do not become a professional tennis player, that I want my future career to involve tennis somehow. This is why I am planning on becoming an engineer, so that I can make tennis rackets for professional tennis players to use, rather than be a professional tennis player myself.

Originally, I had seen a tennis racket being made on a YouTube video going into my senior year of high school. The following video, https://www.youtube.com/watch?v=sgV2DMstyPo&list=UUmgyIibKmFosnm-LyZEB7uQ, showed me how tennis rackets were actually made. In the video, there is someone using Solidworks to create a tennis racket, which made me think, if he can do it, so can I. The hardest part of this project, however, ended up being figuring out how to start. As a result, I found a tutorial on YouTube on how to make a tennis racket.

The following tutorial, https://www.youtube.com/watch?v=F29ok1n7z4A, really gave me a jump start on my CAD project, since it showed a simplistic approach to creating a tennis racket in Solidworks. The person in the tutorial simply got a picture of the tennis racket he or she wanted to create, and then outlined the front view, and did a sweep to make the frame. I chose the tennis racket in **Figure 1**, since I personally own the same racket myself. The end result, is displayed in **Figure 2**, **Figure 3**, **Figure 4**, and dimensioned in **Figure 5**.

Although I tried my best to remodel my racket, there are some dissimilarities between my racket and the one I created in CAD. This is due to the fact that I hand measured most of the dimensions on my racket with string and a ruler. One of the easier parts of my CAD project was making the strings, even though at first I thought it would be the hardest part. I simply made a circle in the right view for the cross strings, and a circle in the top view for the main (vertical) strings, and used the linear tool to equally space out and make 19 circles going across, and 16 going down. Lastly, I simply extruded the circles to make them fit the racket frame perfectly. As you can see in **Figure 4**, the strings are actually cylinders instead of a pattern I originally thought of using. The only thing I was unable to do was make the strings weave in and out of each other, like in an actual tennis racket.

I really enjoyed making this tennis racket, since creating something you use every day yourself is very pleasing. I hope that I will make my own original tennis rackets in the future, that I might be able to actually play with, and hopefully even sell to other tennis players.