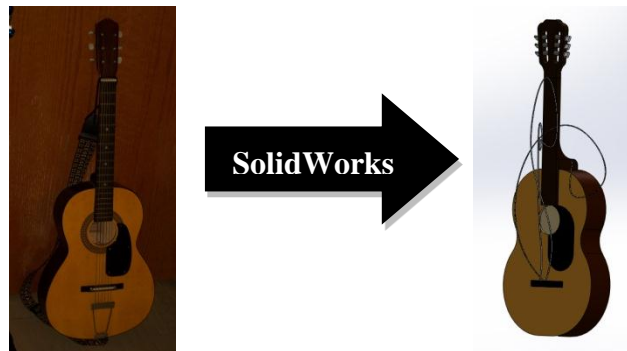


## Meet Miguel!!



For my personal CAD project I chose to replicate my acoustic guitar, Miguel. I named the guitar Miguel after my Uncle Mike, the guitar's first owner. Uncle Mike found it buried in his attic a few years ago and gave it to me. With the help of my musically inclined friends and YouTube I've been teaching myself to play ever since. I brought Miguel here to Penn State with me, but don't have as much time as I would like to play it. I decided to make a CAD model of it because it's one of my most prized possessions.

It was interesting to really study each part of the guitar as I used it to make the SolidWorks model. I had never thought about the dimensions and ratios that go into making a guitar, but as I took measurements and reconstructed the guitar on the computer, I became very aware of just how precise each measurement must be in order for each part to fit seamlessly with the next. I also realized how time consuming it must be to build an actual guitar since it was time consuming just to build an inanimate CAD model of one.

The most difficult part of project was the guitar strings. I thought it would be easy to simply add six strings and lay them on top of the fingerboard in the guitar assembly, but this was not the case. For some reason I could not get the strings to make correctly to both the fingerboard

and the tuning pegs at the same time. Like any engineer would, I brainstormed my options and came up with a creative solution to the problem...I made the guitar look like it did the first day I got it. With only three strings and none of them attached in the right places, Miguel was quite a sight when I first got him. I saved up the money for new strings and took the guitar to the local music store where they made Miguel look like new.

I like play the guitar because it's a good way to relieve stress and I feel a sense of accomplishment when I figure out the riff of a new song. Similarly, I am proud of myself for having learned to use SolidWorks. I had never used computer drawing software before EDSGN, so it was a totally new experience for me. Admittedly I hated SolidWorks at first, and through it sometimes still frustrates me I feel comfortable making 3-D objects. Making sketches, extruding and lofting features, and assembling parts are second nature to me now. I may not be a SolidWorks master, but it's rewarding to be able to communicate my ideas to others using 3D models and drawings.

