

Stay Focused

Weekly Report 4/23/18 to 4/29/18

During this past week I was able to successfully finish the bulk of my CAD model for my 3D printer as well as design some upgrades for the printer. One of these upgrades being a spool holder which would be mounted on top of the printer frame itself with the spool on top of rollers in order to allow the filament to feed smoothly. This was both simple and challenging as I had to make sure that the design had adequate tolerances to fit the frame while still being snug enough and strong enough to maintain the stresses generated by the weight of the spool. At first I was thinking of using 3D printing bolts or inserts to mount the rollers on, but in the end used 3D printed rollers with bearing inserts mounted on an 8mm dowel rod spanning the entire space between the two spool holder brackets. This actually turned out quite well as the dowel had a snug fit on the bearings themselves while also having an inherent strength better than that of plastic with the dowel itself being made of wood rather than plastic. During this week I also experimented with adding a glass bed which allowed for smooth finishes on the bottom face of prints, but I still had some issues with the bed leveling feature of the printer which did not always keep prints level. However, the quality of prints so far has actually been quite good despite this issue. During the past week I also worked heavily on my presentation in preparation for next week's in-class dress rehearsal. I hope that the rehearsal will not only provide helpful practice for the upcoming final presentation night, but also to provide insightful feedback on what I need to improve on before my last presentation. As the year slowly creeps towards a close, I must remember to still stay focused amidst the hectic school schedule and various AP testing which is soon to come.