Debugging

Weekly Report 4/9/18 to 4/15/18

During this week I managed to meet with my mentor and update him on my current progress with my 3D printer. I explained to him the assembly process of having to build the entire frame; making sure to include details about cutting the frame itself out of MDF while also drilling screw holes to mount the 3D printed parts. During my visit at his office, we also tested the printer which I had actually brought to the visit, making sure motion in each axes worked properly while also testing the extrusion of plastic through the nozzle using some spare filament in the lab. One of the main aspects of the printer which needed focus was the position the printer was actually "homing" to which left the nozzle too far away from the bed to get an accurate reading for the Z axis endstop. Dr. Choi's student, Mr. Jin, as mentioned in a previous mentor visit, recommended the use of 3D printed shims to glue on or affix to each axis in order to make sure the nozzle would home in the correct position. With this in mind, when I brought the printer back home again, I went to work adding shims to the X and Y axes in order to make them home in the correct position. I also attempted starting test prints, but had little success as I still needed to both calibrate the position of the Z endstop using both the firmware as well as the position of the endstop itself as well as fix an overextrusion issue which led to messy and failed prints. At this point, I am still adhering well to my schedule, but I have been quite bogged down with finishing my CAD model for the printer. In the coming weeks I hope to finalize my CAD model in the CAD software and make sure that the printer is running smoothly so that I can start testing and comparing prints.