

## MTRL 467 Week 9 - Meeting Minutes

**Date:** March 13, 2020

**Room:** FF 313

**Leader:** Jenna

**Secretary:** Sofia

### Attendance:

Individual	In Attendance
Catherine Greenwood	Y
Jenna Moledina	Y
Clement Asiedu-Antwi	Y
Isabela Taketa	Y
Aleisha Cerny	N
Sofia McGurk	Y

### Agenda:

1. Status Update
2. Hardware update (Printed clamp)

J: Printed the clamp just need to get pins

Daan: Use wooden dowels- hobby store or craft store

J: Laser is chunky, we need to make a wedge to put the laser at the correct angle. Fix to stand is an additional block to fix the left hand side in place.

S: Door stopper to get angle right??

Daan: What about a piece of steel to fix the laser onto the wood via the magnet. Get the guys in the shop to make us a piece of steel and bend it over the side. Can fix it in place with screws.

Jun: Why does it need to be fixed onto the bar?

C: To ensure it is at the same height as the nozzle.

C: We need to put the piece on before taking the image- not during the printing as too heavy.

3. Software update
  - a. Image processing

J: Camera we need to figure it out.

Cat: Found a python wrapper that should be able to control the camera.

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### b. Cat update

Cat: 10 smoothing points works very nice, but not working on the edges because of the algorithm. Changed it to look at the 10 previous values as well as the 10 next values. Worked amazing! But then with the complicated shape (curved) the smoothing algorithm does not work. Wanted to find a way to detect when there was a curve in a line and only smooth it if there was no curve... Does not work though as it either flattens line or doesn't smooth at all.

Daan: Could we look at the progression? Watch the feature going down?

Cat: It is straight lines of values so that won't work.

Daan: We have to look @ straight line of values. Look further ahead during a feature: look two lines into the future. Minimum overlap is the maximum height of the lower layer (for a feature).

J: Overlap more feature is minimized

Daan: Need to be able to project out enough points to determine if this is a feature or not.

Daan: When you have a curve it manifests as little steps- distance projected out needs to be great enough to determine if something is a feature or a defect. Want to determine if there is a progression (either up or down) as an error will appear one time and not be progressive.

Daan: Upwards trend

J: Do this before you smooth it.

Cat: Check the number of different types of values there are instead of the mode? Is it in order of max to min or min to max.

Daan: Cause if there is a pattern then we can use the progression to determine if something is curved or not.

C: Sometimes it prints in such a way that things cool.

Daan: Can we take a print and determine where there should be filament on a certain level.

Somehow you get multiple heights for a particular layer.

Cat: Height file and keep it the same and you just overwrite it. Only smooth the new data- ignore what happened before.

Daan: That might work

S: If it doesn't work can we just use simpler objects- make that a constraint.

Daan: Yes but keep trying

J: For next week the goal is to combine all software together.

J: We think that the white lines on the print bed might be an issue.

Daan: set it up so that the camera cropped to only be on the part and just over the edges.

S: Just position so white lines are not in FOV.

J: Sheet metal, camera functionality and the code

### Action Items:

	Item	Assigned To
1.	Finish Hardware setup: add pins and extra support	Clement & Sofia

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2.	Talk to shop to get SS piece made and fixed to setup	Clement and Sofia
3.	Software: merge codes	All
4.	Figure out how to control the camera	All

**Next Meeting Time: March 20th @ 11 am (On-line)**