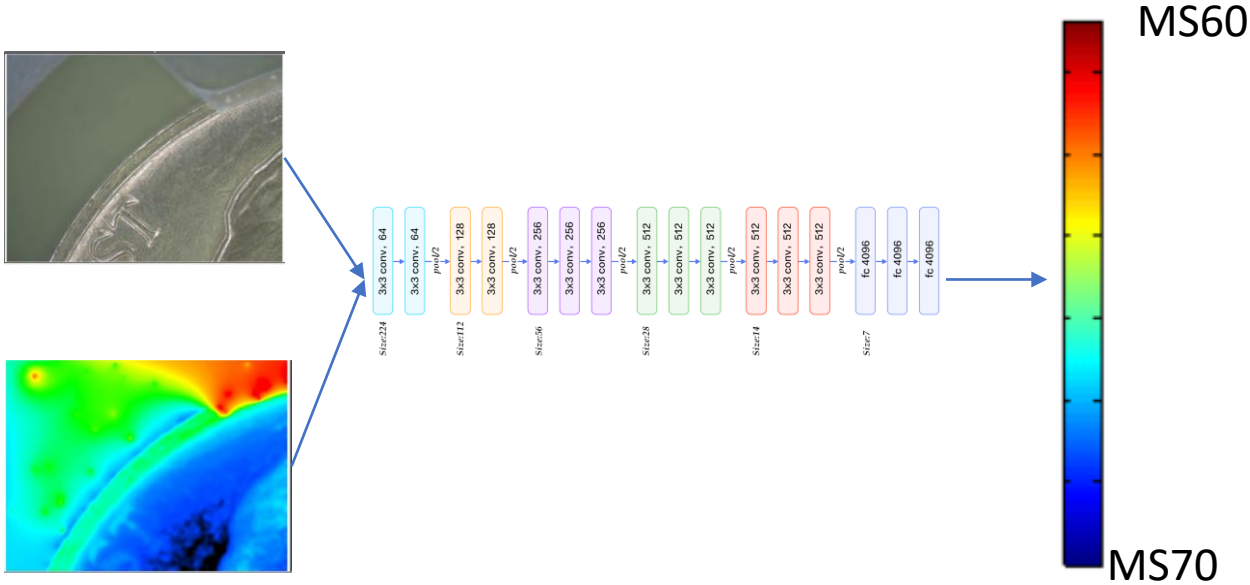
Prototype and Future Plans

The prototype takes in two inputs, the height map and the color map of the coin. The third one in your software is the overlap between the height map and the color map, even though it appears different on your screen. It output scores from 0 to 1, where 0 is MS60 and 1 is MS70.



Number of Samples : The objective is to find the VC dimension and it is not possible for images with deep neural network. By assuming there is a clear separation between the MS66 and MS67 as such and assuming we can separate the coins easily using linear separator. We need atleast 2000 scanned images to classify the model from the **scanner** in the “most” ideal situation**.**

Instead of all these image data coming to me all at the same time, I like to have this data in a piece meal where you give me as much data for a day, so agile methodology will also be followed.

“Also note that for clues I will be needing the color coding important areas of the coin just like in book after the prototype is built and I will be asking them on a piece meal as well”

Data Consumption :
I like to have .csv files along with the .png files for data quality verification. Deep Learning Neural Networks could not accept the blank data and improper formats, so I have to clean the data before they are sent to the algorithm.

Deep Learning Techniques :
For Prototype, I will be using the best standard image classifier available SeNet to classify the grading scale with slight modifications that can take in height data.
I will not be using the shared weights from the existing SeNet, otherwise it would be comparing two different things(like apples and oranges).
Due to bias in Sheldon Grading Scale due to preferred vendors, we have to use different deep learning methods.

1. Week Learners(each learner could learn from different grading company or time period or type of coins like Jeffersons etc) and a strong learner from the coins labelled Michael.
2. Learning Color coding from the book to identify the areas of important(Red, Green and Yellow) and learning defects from the second coloring(only red color on the coin images in the book).

3. Disentangling the coins of different grades, types etc to understand the behavior of the data. Here we will be using the actual coins to create the height maps or actual coin itself. A 2D representation of what AI algorithm thinks could provide insight into better classifications.
4. Utilizing the information from the above, a direct image capture of the coin without height data to provide better grading.
5. Utilizing capsule networks to classify the coin when image taken by the consumer is misaligned for improved accuracy.