Major Changes
None

What Have You Accomplished So Far?
Working on developing a convolution unit that could handle dense matrices. While sparse matrices could also be convolved efficiently with this design, it would require a whole extra set of compression, and decompression steps. This part of the project is inspired by Eyeriss and SCNN. Although, in this case, their research is entirely dedicated to developing the fastest and most efficient dedicated 2D, multichannel convolution unit, with a massive bandwidth for fetching inputs. In a short summary, if $N$ is the height of their filter, they are able to fetch enough elements at one time to perform $N$ 1-D convolutions across the entire width of the input feature map in a number of cycles directly proportional to the width of the feature map. On this particular implementation, the same set of convolutions could be performed, but multiplied by the amount of array elements that have to be fetched, since they can load all the array elements in (ideally) one time step, but the bandwidth of this system is limited to loading all the array elements sequentially. So, with this respect, developing the convolution unit requires some special consideration towards the actual operation, and I’ve spent considerable time and meetings to figure out this operation. I’ve also been spending time trying to learn to get this entire set of modules integrated into the larger project led by the graduate student, and this has also taken considerable time. Of course, this is due to me jumping onboard pretty recently, and still learning how everything works not only on their project, but in the grander scheme of computer architecture.

Meeting Your Milestone
Similar, as before

Surprises
None, everything has been proceeding smoothly.

Revisions to Your 15-400 Milestone
I need to move up things in the milestone/add some extras since I’ve gone pretty fast. I’ve also felt my skill set maturing pretty well too, and appreciate the domain knowledge that I have been acquiring.

Resources Needed
None