Ankush Patel

CS 494

Week 1 Summary

During the first week, I learned about CNNs and how they function in terms of image classification. In particular, I found that convolution allows for feature extraction while preserving the spatial relationship among pixels. Furthermore, I found that methods such as ReLU and MaxPooling can be utilized for faster training. ReLU is an activation function that gives us fast convergence compared to linear or sigmoid activation functions and. On the other hand, MaxPooling reduces the dimensionality of the input set, while retaining the most important information.

After creating, training, and testing the CNN to perform cats vs dogs classification, I performed image degradation by applying a gaussian blur on the test set. The purpose of this was to see how well the model performs on images that have a varying degree of blur. Incredibly, I found that the accuracy of the model increased at 0.5 std of gaussian blur, then proceeded to rapidly decrease as the standard deviation was increased. I learned that blurring the image decreases the random noise present in the image, allowing the model to learn better than without the blur.