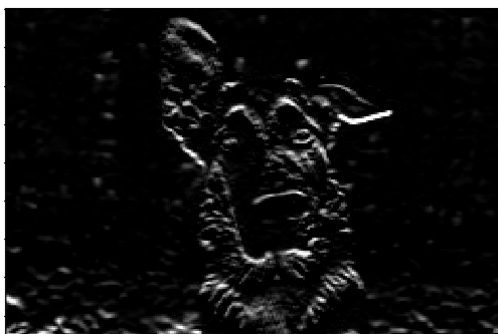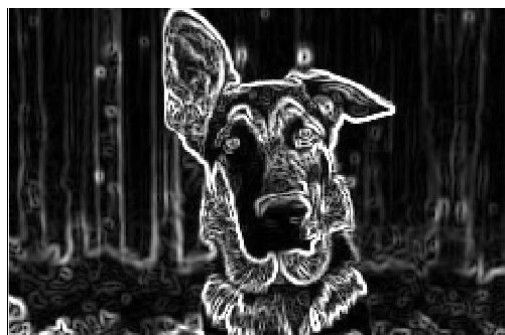# Homework 1 Write-Up - Amber Nelson

I followed the descriptions for how to implement each function pretty closely in my code and wrote out the convolution process myself in the filter function.
Below are the differential filters. Differentiation with respect to x is on the left, y on the right.

Below are the resulting images for the gradient and angles.

I implemented the binning and descriptor functions based on the explanation of how they were supposed to work in the homework PDF. Despite this, I found that I had issues getting exactly what I expected. Below is my resulting HOG using block size 2 and cell size 8. Without proper normalization of the blocks, it looks like the right image. I don't feel like this is a completely correct representation of HOG but its close. I believe my understanding of how HOG works is good, but there may be some bug in my code I just could not figure out.