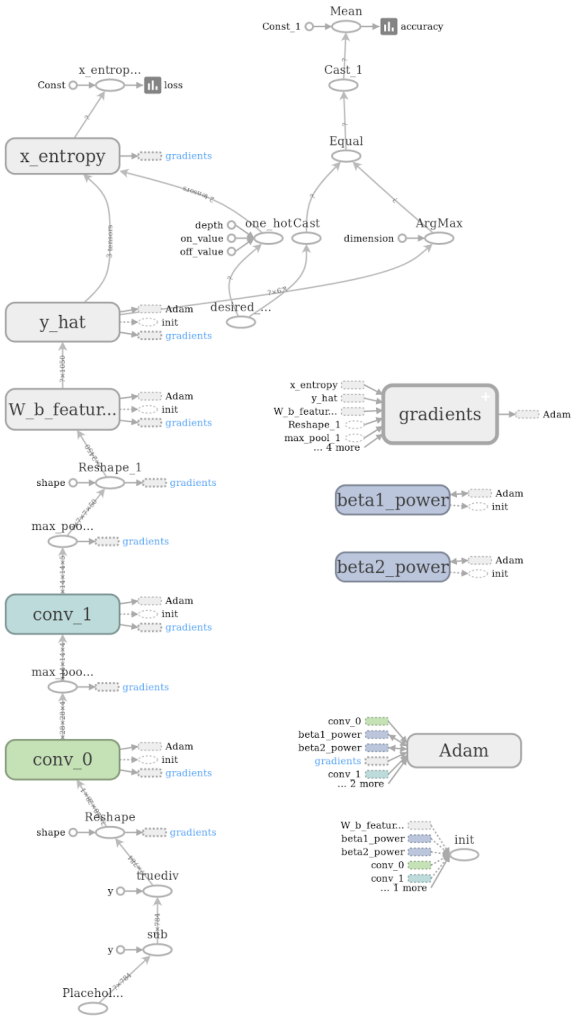
CNN

Convolutional Neural Network implementation with TensorFlow API.

Structure:

1. Normalization of each input image from [0, 255] → [-1, 1]
2. Reshaping of flat input data to square tensor
3. Convolution with 40 kernels
4. Max pooling
5. Convolution with 50 kernels
6. Max pooling
7. Reshaping to flat vector
8. Fully-connected feature layer with 1050 neurons
9. Fully-connected feature layer with 62 neurons



We used two layers mainly due to the data set we were working with. One layer would not have been complex enough for the data, and more layers gave us poor results compared to two. The reasoning behind the number of neurons in the fully-connected layer is similar, as less neurons gave worse results. The number of kernels (filters) during convolution was also chosen via a trial and error approach.
