

## PROJECT

## Traffic Sign Classification

A part of the Self Driving Car Engineer Nanodegree Program

## PROJECT REVIEW

## CODE REVIEW

## NOTES

SHARE YOUR ACCOMPLISHMENT!  

## Meets Specifications

You put a lot of effort into this project and it really shows off.

I really enjoyed reviewing your notebook and README! you have done a phenomenal job!

I wish you all the success for your next submission on Behavioral Cloning.

Keep up the amazing work!!

P.S. I really suggest that you write a blog/medium post on this project. You did an amazing job and most of the students (including me) can really benefit from a detailed description of your approach.

see [this blog post](#) as a sample or simply [search medium](#) for some samples. (and please share with me a link to it)

## Files Submitted



The project submission includes all required files.

## Dataset Exploration



The submission includes a basic summary of the data set.

Great job providing a basic summary of the dataset.



The submission includes an exploratory visualization on the dataset.

Great job plotting the distribution of the training data and visualizing sample images for every class.

## Design and Test a Model Architecture



The submission describes the preprocessing techniques used and why these techniques were chosen.

Awesome job augmenting the images using CLAHE, generating additional augmented images, balancing the data distribution, and converting the images to a custom grayscale.



The submission provides details of the characteristics and qualities of the architecture, including the type of model used, the number of layers, and the size of each layer. Visualizations emphasizing particular qualities of the architecture are encouraged.

Awesome job explaining, summarizing, and visualizing your final model.

I really love the visualization of the model. pretty neat 😊



The submission describes how the model was trained by discussing what optimizer was used, batch size, number of epochs and values for hyperparameters.

Awesome job describing how you tuned the model's parameters, how you used dropouts and L2 regularization to avoid overfitting.

have you tried running the model using less pooling layers? see [this post](#) by Geoffrey Hinton where he claims that pooling might not be the best idea.



The submission describes the approach to finding a solution. Accuracy on the validation set is 0.93 or greater.

- Awesome job attaining an accuracy of 99.4% on the validation dataset and 98.2% on the test dataset. (this blows me away! I think you beat all records for this project)
- Great job playing around with many different models/preprocessing techniques until you achieved your final model

## Test a Model on New Images



The submission includes five new German Traffic signs found on the web, and the images are visualized. Discussion is made as to particular qualities of the images or traffic signs in the images that are of interest, such as whether they would be difficult for the model to classify.



The submission documents the performance of the model when tested on the captured images. The performance on the new images is compared to the accuracy results of the test set.



The top five softmax probabilities of the predictions on the captured images are outputted. The submission discusses how certain or uncertain the model is of its predictions.

Well done!

 [DOWNLOAD PROJECT](#)

[RETURN TO PATH](#)

Rate this review



[Student FAQ](#)

[Reviewer Agreement](#)