UDACITY

PROJECT

Traffic Sign Classification

A part of the Self Driving Car Engineer Nanodegree Program

PROJECT REVIEW

CODE REVIEW

NOTES

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Meets Specifications

Dear Udacian,
You did a very good job in this submission of this project. I specially liked your methodical approach here. Please, Keep up the Good Work

Dataset Exploration

Student performs basic data summary.

You did an excellent job here summarizing the dataset. Indeed there are
39209 training examples, 12630 testing examples
the shape of the images is 32x32 and there are 43 classes

Student performs an exploratory visualization on the dataset.

You did very well here in producing a visualization on the dataset. It is a wise idea to plot a histogram of the number of images against their image label. This helps to give an overview of how the classes are distributed in the dataset.

Design and Test a Model Architecture

Students provides sufficient details of the preprocessing techniques used. Additionally, the student discusses why the techniques were chosen.

Well done providing sufficient details of the preprocessing techniques used and also providing a discussion as to why you chose to use these specific techniques.

Student provides sufficient details of the characteristics and qualities of the architecture, such as the type of model used, the number of layers, the size of each layer. Visualizations emphasizing particular qualities of the architecture are encouraged.

Well done. You clearly outlined in your answer:

1. The characteristics of the architecture.
2. The type of model used.
3. The number of layers in the model.
4. The size of each layer.

Suggestions

- To make this answer even better, you can also produce a visualization emphasizing particular qualities of the architecture. I would like to invite you to take a look at tensorboard a tool for visualizing your models made with tensorflow

- Producing a visualization emphasizing on particular qualities of the architecture are greatly encouraged.

Student describes how the model was trained and evaluated. If the student generated additional data they discuss their process and reasoning. Additionally, the student discusses the difference between the new dataset with additional data, and the original dataset.

Amazing work here on describing how you trained and evaluated your model. Indeed, generating additional data is a good idea due to the unbalanced nature of the dataset. Well done here in noticing and providing a good reasoning as to why you used an augmented dataset.

Student thoroughly discusses the approach taken for deriving and designing a model architecture fit for solving the problem given.

Excellent work here on providing a good and reasonable explanation of your approach on deriving and designing your model architecture.

Test a Model on New Images

Student chooses five candidate images of traffic signs taken and visualizes them in the report. Discussion is made as to any particular qualities of the images or traffic signs in the images that may be of interest, such as whether they would be difficult for the model to classify.

Nice! Indeed testing on images that were not originally in the training set will be very very difficult. Thus this can be considered as a quality of an image that might make classification difficult. You also mentioned that there are some signs that are rusty and also sun bleached signs. Indeed partial occlusions can also be considered as particular qualities that might make classification difficult.

Student documents the performance of the model when tested on the captured images and compares it to the results of testing on the dataset.

Great job on providing enough information on the performance of your model on your captured images

The softmax probabilities of the predictions on the captured images are visualized. The student discusses how certain or uncertain the model is of its predictions.

Great visualization of the softmax probabilities of the predictions on the captured images. You also added a good discussion on the certainty and uncertainty of the model. Nice!

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