UDACITY

PROJECT SPECIFICATION

Traffic Light Classifier

Notebook Questions

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All questions answered	In the project notebook, all questions are answered. (There are two questions total.)

Pre-processing

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Standardize the input images	All input images (before they are classified) should be processed so that they are the same size.
One-hot encode all output labels	All labels should be a one-hot encoded vector of length 3. Ex. 'yellow' becomes: [0, 1, 0].

Create a brightness feature

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Create a brightness feature that uses HSV color space	Using HSV colorspace, extract a feature from a traffic light image that represents the level(s) of brightness in an image. This feature can help classify any traffic light image. A feature can be a list, array, or a single value.

Classification Model

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Build a complete classifier	Using any created features, write a classification function that takes in a standardized RGB image and outputs whether a traffic light is red, yellow, or green as a one-hot encoded label.

Model Evaluation

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Accuracy	The model must have greater than 90% accuracy on the given test set.
No red lights labeled as green	In the given test set, red traffic lights can never be mistakenly labeled as green.

Suggestions to Make Your Project Stand Out!

1. (Optional) Aim for >95% classification accuracy.
2. (Optional) Some lights are in the shape of arrows; further classify the lights as round or arrow-shaped.
3. (Optional) Add another feature and aim for as close to 100% accuracy as you can get!

Student FAQ