

# P17 - Train and test traffic light detection with B&W images

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# Project description

Project type: Self-proposed project

Description: Compare the results of some selected NN model(s) if trained on traffic lights colored images vs black and white images vs on both. The target is to find out if and how much does it improve the results if black and white images are added to training data.

Link: <https://github.com/krtt/ML2020project>

**NOTICE: 2 members left from team in middle of project (one was project initiator)**

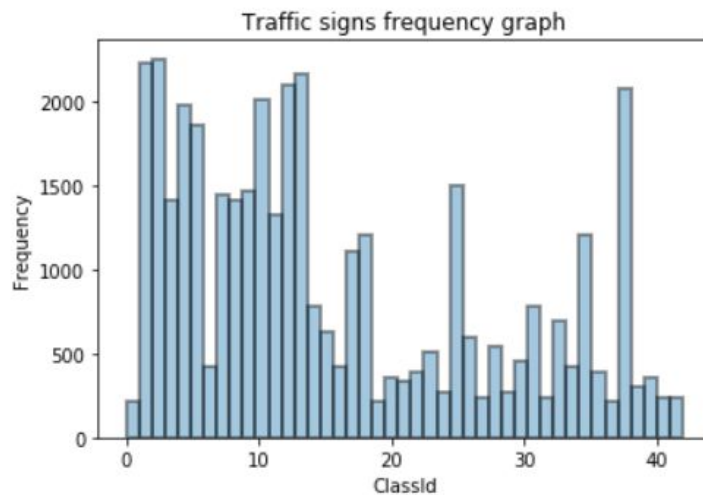
# Dataset 1

## LaRA - German traffic signs detection dataset

(We worked with many different datasets)

- 39209 images with 43 different classes
- Trained model = Sequential

This had too few traffic lights (ClassId 1) inside database, mainly contained traffic signs



Traffic signs frequency graph

# Datasets 2

## LISA Traffic Light Dataset

- More than 44 minutes of annotated traffic light data
- ~5GB of images
- Too many pictures with very small or without traffic lights
- Traffic lights are given with coordinates
- The same problem was with Bosch Small Traffic Lights Dataset (~50GB)



```
In [21]: train_df, test_df = train_test_split(df, test_size=0.2) # split(df)
```

```
In [22]: train_df.head()
```

```
Out[22]:
```

	image_id	label	x_min	y_min	x_max	y_max	frame	isNight	clipNames
1770	/content/drive/My Drive/Colab/nightTrain/night...	3	622	306	641	343	533	1	nightTrain
783	/content/drive/My Drive/Colab/nightTrain/night...	1	803	357	813	375	294	1	nightTrain
8820	/content/drive/My Drive/Colab/dayTrain/dayTrai...	1	802	379	832	434	2455	0	dayTrain
9521	/content/drive/My Drive/Colab/dayTrain/dayTrai...	1	682	352	694	377	2596	0	dayTrain
1882	/content/drive/My Drive/Colab/nightTrain/night...	1	690	361	697	373	507	1	nightTrain

# Datasets 3

## Custom Dataset

- Created a new small dataset from internet files
- 2 different approaches for conversion of color to B&W pictures:
  - Converting with external tool
  - Converting online while loading pictures to image list
- Less about 100 pictures
- Trained model = Sequential



# Results

We didn't get any better results after adding B&W images to trainset

