1 Traffic Signs

In this exercise, the Dataset consists of traffic signs images and image labels. The objective is to design a neural network using the PyTorch library to recognize the label of traffic signs. Notice that you should answer these questions in your report.

- Are the size of classes balance? if not, try to explain and solve this problem.
- Does the color of images affect the accuracy of the model? How much is the cost of using colored images?
- Can you improve your model's accuracy by augmenting the dataset? Explain your idea.
- Run your best model on the test dataset and explain the results.
- Plot the output of different layers of your neural network and explain them. Do this on filters too.

2 House Prices and Images

In this exercise, the Dataset consists of house images and some other features of houses. The objective is to design a neural network using the PyTorch library to predict the price of houses. The features are explained below.

- **image_id**: The ID of this image in the images folder.
- **street**: The name of the street.
- **city**: The name of the city.
- **n_city**: A label for city column.
- **bed**: The number of bedrooms.
- **bath**: The integer part is the number of full bathrooms and the fractional part is the number of half bathrooms.
- **sqft**: The area of the house.
- **price**: The price of the house.