I. Introduction

This report describes the designing and implementation of a Deep Learning model that is capable of classifying digital images of traffic signs. Traffic sign classification is used for example in cars to automatically provide information about the currently applicable traffic rules like the speed limit to the driver or an automated driving system. The type of Deep Learning model that was selected for this task is a Convolutional Neural Network (CNN). The following chapter contains a definition of the task at hand.

II. i. Task Definition

The goal of this project is to construct an appropriate Deep Learning model that is capable of classifying digital images of traffic signs, in such a way that each image is mapped to an integer that represents a class, such as “Speed limit 20” or “Turn right”. An appropriate model shall be found by testing a variety of architectures and parameter combinations of CNNs using an appropriate training data set that will be split into two parts, one for training and one for validation. The scope of this project was reduced to CNNs from the beginning, since the established literature suggests that they are most fit for the task of image classification (see for example chapter 5.5.6 of [1]). Next to the designing and implementation of the model, the evaluation of the same with appropriate test data and evaluation measures is another crucial part of this project. This will be further described in the following chapter.

# Bibliography

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| [1] | C. M. Bishop, Pattern Recognition and Machine Learning (Information Science and Statistics), Berlin, Heidelberg: Springer-Verlag, 2006. |