6 CONCLUSIONS

While manufacturers are still adopting various driver assistance systems, most cars are still far from being fully autonomous and thus the human element needs to be accounted for with ADAS.

There is no one best way how to do correct image recognition, but the implementation within the framework of this project seems to produce reliable results. However, it is by no means perfect. Since the lighting on the road is not constant and is changing all the time, systems like this need to be capable of dealing with that. While HSV colour filtering and thresholding seems to excel at producing good results most of the time, such systems need to be made more consistent. This could be achieved by means of machine learning, allowing the device to learn from past data and adjust itself according to the visibility conditions on the road.

Within the framework of this work, the aim of this thesis has been achieved with the creation of an affordable and easily modifiable device that uses computer vision for lane detection. This device can serve as a further basis for research and development. With it being open source, it can be modified for the data to be captured and aggregated and essentially used as a platform for predicting driver behaviour.

Moreover, with the enormous library OpenCV offers, the device can be further optimized for recognizing not only lanes, but other vehicles, road signs and other important elements of the road.

This would serve to ensure that not only older vehicles could be modified to have some of the same functionality as newer ones, it can also lead to opening up ADAS systems for development and ensuring that they are not tied to each single manufacturer, but to an active community of developers and enthusiasts.