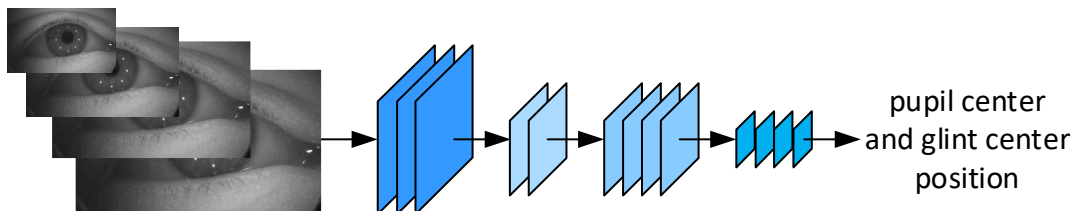


Master Thesis

Embedded image processing and analysis close to the image sensor is gaining more and more momentum since it allows to reduce required communication bandwidth to the next layer in the processing hierarchy. This saves energy and enables significant efficiency improvement for the consumer industry. Image processing on a smart image sensor not only comes with benefits but also includes technical challenges.

The focus of this master thesis is on the design and analysis of the accuracy of a neural network for different input resolutions for a pupil detection application. This application is integrated into a smart image sensor with limited resources. Detection accuracy and efficiency in terms of memory usage and execution time are of utmost importance in this context. Furthermore, the neural network should be trained and tested.



Student Target Groups:

- Target of this master thesis is the development of a neural network and analysis of the neural network accuracy for different input image resolution for pupil detection. The neural network should be trained and tested for the different input image resolutions. Students of ICE/Telematics, Informatics

Thesis Type:

- Master Thesis

Required Prior Knowledge:

- Good programming skills (C/C++, Python)
- Basics of Machine Learning
- Basics of image processing

Goals and Tasks:

- Design and Implementation of a neural network for pupil detection.
- Analysis of the accuracy for different input image resolutions
- Performance analysis and tests of the neural network on an embedded processor.

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