Design of a GUI for fast rendering of input data and graphs through parallelization of code

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Abstract: Bachelor Thesis

Virtual reality in automotive software is a state of the art method to test underlying algorithms in different scenarios. Images and data are extracted from the virtual reality environment and fed to the test controller to test the various algorithms. Through a Graphic User Interface, it should be possible to select the algorithms, start the process, display the input data and the output graphs in a user friendly, yet fast way. Because of very high temporal accuracy requirement, the graphic process unit should be tailored to work in real time. Hence, real time display of the data with means of different GPU and CPU cores to speed up the display process is the core scientific job of the thesis. Some aspect to learn the parallelization of code on different cores to see the difference in the run time is a non functional requirement of the thesis. The graphical layout would be done in QT. The following figure provides a short overview of the thesis.