

The goal of this thesis is the concept of the evolutionary development of the front-end camera input filtering for the mobile robot. Controlling mobile robot with the camera input is a generally hard task because it offers too much information and is impractical to process them directly. It is possible to reduce the amount of the information with use of front-end filtering using the methods of the image processing. However it is not easy to construct it manually for different tasks. This thesis proposes an automatic construction of such front-end filtering system that will reduce the amount of the information gathered from the camera input and also decides about the content of the image scene. It has also been implemented an application that hires genetic algorithm for the construction of the filtering sequences. The part of this thesis is experiments with selected tasks.