

**Review of Diploma Thesis Work of Ashykhmin Mykhailo Entitled
„Design of a Laser Distance Sensor With a Web Camera for a Mobile Robot“
Reviewer doc. Ing. Jan Chyský, CSc.**

The diploma work is focused on real time analysis of camera image for finding obstacles surroundings the robot. The knowledge of it is important for robot movement.

The work consists of 9 chapters, 3 tables and 35 figures on 51 pages. In introduction chapter author gave overview to basic requirements of robot vision in territory orientation and possible ways how to solve this problem. Author made a brief literature retrieval and on this made conclusion to use active method for subject recognition near the robot. Chosen method uses one camera in conjunction line laser for lighting scene. There are explained the methods for image processing to prepare for analysis. In chapter 5 there are described and derivate two mathematical algorithms for finding distance of point lighted by laser.

Next chapter introduces software solution of this task. For processing author used graphic programming language LabView with Image Processing library. The task is divided into simple sub-task resolved in sub vi's.

The experimental results are summarized in chapter 7, chapters 8 and 9 consists of conclusions and recommendations for future work.

On my mind the work belong to more difficult work, needs to complete knowledge of student. In this case Mr. Ashykhmin had to study methods of image recognition and programming in LabView. The given task was completely fulfilled; methods of solution were correctly chosen. Level of this diploma work is excellent, it consists of all specified parts. Student demonstrated his abilities to process given task including to learn new needed knowledge. Formal level of these diploma work is better than usual; language level I consider very good, as I can to review.

My question: The recognition should work in real time, did you make some calculation or experimental finding of the time for evaluation one snap?

I do recommend this diploma work for presentation with the aim to receiving the Master Degree.

I propose to classify the work with grade A (excellent)

Prague, June 22, 2016

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Jan Chyský