

Supervisor's Review of Bachelor Thesis

Author: Kryštof Teissing
Title: Time Parameterization of the Manipulator Path
Faculty, depart.: Faculty of Electrical Engineering, Department of Cybernetics
Study program: Cybernetics and Robotics

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Affiliation: CTU in Prague, CIIRC
Department: Robotics and machine perception (RMP)

The main topic of the thesis deals with trajectory planning for industrial robotic manipulators. The thesis is focused on algorithms for trajectory time parametrization. The author studied and described three selected algorithms (IPTP, TOTG, TOPP-RA). Two of them are implemented in ROS and one was incorporated into ROS by the author. Part of the work is the estimation of the robot's mechanical parameters and the setup of the algorithms' parameters. The algorithms were tested on 4 trajectories where unwanted behavior can occur. The main problem lies in rapid changes in the acceleration which result in the jerky movement of the robot. The speed of the algorithms was compared and the quality of the generated trajectories was presented.

The thesis is written in English. The author describes the assigned topic clearly and comprehensibly. The text is well structured, only chapter 4 could be incorporated into section 3.3. A few typographic errors are in the text, but the language of the thesis is very good.

The student demonstrated the ability to work on engineering and scientific topics and to solve difficult tasks. He shows skills needed to independently search, read and analyze research articles. He presents this ability during the design and realization of experiments with different algorithms. I am convinced that the student could be a successful researcher in the future.

In my opinion, the author fulfilled the assignment of the thesis. The thesis satisfies all requirements for a bachelor thesis. The author has demonstrated adequate knowledge in the field of study. Based on the above facts, I am **recommending** the thesis to the defense. My final evaluation of the thesis is **A (excellent)**.

In Prague 7. 6. 2021

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Ing. Pavel Krsek, Ph.D.
Supervisor