FACULTY OF INFORMATION TECHNOLOGY CTU IN PRAGUE

Review report of a final thesis

Reviewer:	Ing. Zdeněk Buk, Ph.D.
Student:	Yelizaveta Tskhe
Thesis title:	AWS DeepRacer Controller Training Scenarios Exploration for Real-World Perfomance
Branch / specialization:	Software Engineering 2021
Created on:	11 June 2024

Evaluation criteria

1. Fulfillment of the assignment

▸ [1] **assignment fulfilled**
[2] assignment fulfilled with minor objections
[3] assignment fulfilled with major objections
[4] assignment not fulfilled

The assignment is fulfilled in all key areas. The thesis includes a literature review, design and training of models, proposal of training procedure improvements, and testing and evaluation in real-world conditions.

2. Main written part 90 /100 (A)

The thesis is well-structured and covers all important aspects of the problem. Relevant techniques and methodologies were used, supported by experimental results.
There are some minor issues (e.g., more detailed figure descriptions and better math typesetting in section 1.3.3 would be appreciated), but none of these affect the overall understandability of the text.

3. Non-written part, attachments 100 /100 (A)

The student had to familiarize herself with and master non-trivial technologies. She demonstrated the results of her work in a real environment using an actual hardware model of the vehicle.

4. Evaluation of results, publication outputs and awards 90 /100 (A)

The thesis is of high quality and meets all the requirements set out in the assignment. If there is any room for improvement, it could be a more detailed comparison with past bachelor's theses on AWS DeepRacer if they were available.

The results of the work are not entirely innovative, but they very nicely demonstrate the knowledge gained through study in practice. The student has familiarized herself well with the subject matter, and this work will certainly help other colleagues build on it with more complex experiments in the future.

The overall evaluation 95 /100 (A)

Based on the above assessment, it can be concluded that the thesis fulfils the assignment very well and aligns with the requirements for a bachelor's thesis in the field of machine learning and autonomous driving.

Instructions

Fulfillment of the assignment

Assess whether the submitted FT defines the objectives sufficiently and in line with the assignment; whether the objectives are formulated correctly and fulfilled sufficiently. In the comment, specify the points of the assignment that have not been met, assess the severity, impact, and, if appropriate, also the cause of the deficiencies. If the assignment differs substantially from the standards for the FT or if the student has developed the FT beyond the assignment, describe the way it got reflected on the quality of the assignment's fulfilment and the way it affected your final evaluation.

Main written part

Evaluate whether the extent of the FT is adequate to its content and scope: are all the parts of the FT contentful and necessary? Next, consider whether the submitted FT is actually correct – are there factual errors or inaccuracies?

Evaluate the logical structure of the FT, the thematic flow between chapters and whether the text is comprehensible to the reader. Assess whether the formal notations in the FT are used correctly. Assess the typographic and language aspects of the FT, follow the Dean's Directive No. 52/2021, Art. 3.

Evaluate whether the relevant sources are properly used, quoted and cited. Verify that all quotes are properly distinguished from the results achieved in the FT, thus, that the citation ethics has not been violated and that the citations are complete and in accordance with citation practices and standards. Finally, evaluate whether the software and other copyrighted works have been used in accordance with their license terms.

Non-written part, attachments

Depending on the nature of the FT, comment on the non-written part of the thesis. For example: SW work – the overall quality of the program. Is the technology used (from the development to deployment) suitable and adequate? HW – functional sample. Evaluate the technology and tools used. Research and experimental work – repeatability of the experiment.

Evaluation of results, publication outputs and awards

Depending on the nature of the thesis, estimate whether the thesis results could be deployed in practice; alternatively, evaluate whether the results of the FT extend the already published/known results or whether they bring in completely new findings.

The overall evaluation

Summarize which of the aspects of the FT affected your grading process the most. The overall grade does not need to be an arithmetic mean (or other value) calculated from the evaluation in the previous criteria. Generally, a well-fulfilled assignment is assessed by grade A.