

I. IDENTIFICATION DATA

Thesis title:	Efficient Exploration of Body Surface with Tactile Sensors on Humanoid Robots
Author's name:	Maksym Shcherban
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Cybernetics
Thesis reviewer:	Mgr. Matěj Hoffmann, Ph.D.
Reviewer's department:	Department of Cybernetics

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>How demanding was the assigned project?</i>	
This project was challenging as it required substantial software development in the Gazebo simulator and its interfacing with the YARP middleware, followed by using this newly developed tool as a testbed for active learning algorithms.	

Fulfilment of assignment	fulfilled with minor objections
<i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	
The parts of the assignment dealing with the development of the robot simulator with artificial skin were fulfilled (tactile sensor distribution mimicking the real iCub robot). The parts (4. and 5.) focusing on testing different exploration algorithms were fulfilled but at a basic level.	

Activity and independence when creating final thesis	C - good.
<i>Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.</i>	
The student is very competent and capable of high quality independent work. However, due to a combination of unfortunate circumstances largely beyond his control, he was not able to work steadily on the thesis. The proposed schedule of weekly meetings was not adhered to.	

Technical level	B - very good.
<i>Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?</i>	
The student's work can be split into two parts. The first part consists of the software development—adding the whole-body tactile sensors to the Gazebo simulator. This part is technically sound and well documented. The second part—where the simulator was used to test active learning algorithms—is preliminary in terms of formal descriptions, results, and their analysis.	

Formal level and language level, scope of thesis	B - very good.
<i>Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?</i>	
The thesis is well written and the software development part well documented (see also the readme on the gitlab repository). English is very good. The parts describing the active learning algorithms could be documented more formally and extensively.	

Selection of sources, citation correctness	A - excellent.
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THESIS SUPERVISOR'S REPORT

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

References to related work as well as the student's previous work are adequate. Online resources are properly cited and credited. There is an openly accessible repository hosting the code developed in the context of the thesis.

Additional commentary and evaluation (optional)

Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Summarize your opinion on the thesis and explain your final grading.

This is a very good Master thesis. The software developed—adding the sensitive skin to the iCub Gazebo simulator—is an important contribution to the whole community of users of the iCub robot. The second part of the thesis where this tool was a testbed for active learning algorithms is preliminary. The results are largely the first set of results obtained and additional testing of different parameters and analyses would be required.

The grade that I award for the thesis is **B - very good**.

Date: **13.8.2021**

Signature: