



## THESIS SUPERVISOR'S REPORT

### I. IDENTIFICATION DATA

<b>Thesis title:</b>	Artificial skin calibration for a humanoid robot: comparing or combining "self-touch" and 3D reconstruction from images
<b>Author's name:</b>	Bohumila Potočná
<b>Type of thesis :</b>	bachelor
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering (FEE)
<b>Department:</b>	Department of Cybernetics
<b>Thesis reviewer:</b>	Mgr. Matěj Hoffmann, Ph.D.
<b>Reviewer's department:</b>	Department of Cybernetics

### II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	challenging
<i>How demanding was the assigned project?</i>	
The thesis involved work from a number of different areas (3D reconstruction, processing of artificial electronic skin data, optimization), most of which were largely new to the student. Work with a real robot and synchronization between the robot's operating system (NaoQi) and the middleware to retrieve skin data (YARP) was also required.	

<b>Fulfilment of assignment</b>	fulfilled with minor objecti
<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 assignment has been fulfilled although the results are largely a product of the "first iteration" and are thus preliminary/inconclusive.	

<b>Activity and independence when creating final thesis</b>	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 did work on the thesis regularly. However, her pace was rather slow and required significant conceptual guidance.	

<b>Technical level</b>	C - 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 thesis is technically sound. A big part of the results was produced shortly before the deadline and the results are thus inconclusive and preliminary. Chapter 5 (Results) is often a list of results with proper interpretation lacking. Careful analysis and additional experiments would be needed.	
The results are well documented with links to code and datasets and can thus be reproduced / extended.	

<b>Formal level and language level, scope of thesis</b>	C - 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>	
Formalisms/notations are used properly, although a more rigorous treatment (e.g., in the Methods chapters (2-4)) would be desired. The thesis is organized in a logical way and sufficiently extensive. The language level is ok. A number of useful illustrations / schematics facilitate understanding.	

<b>Selection of sources, citation correctness</b>	D - satisfactory
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*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?*

The student did not explore the literature much beyond the works prescribed in the assignment. Guidance with related work, including the formatting of references, was needed.

### **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.*

The work is an extension of the Bachelor thesis of Rustler (2019), adding two new aspects: (1) 3D reconstruction of taxel positions and (2) self touch with custom end effector. Results of (1) are a clear contribution to calibrating the electronic skin for this particular platform. The results of (2) and their combination with (1) are not conclusive. Additional work is needed to wrap up the work to prepare a manuscript going beyond the state of the art.

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

My overall recommendation derives from the points described above.

The grade that I award for the thesis is .

Date:

Signature: