

I. IDENTIFICATION DATA

Thesis name:	Automating Spatial Calibration of Whole-Body Artificial Robot Skin Using 3D Reconstruction
Author's name:	Bohumila Potočná
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Cybernetics
Thesis supervisor:	Doc. Mgr. Matěj Hoffmann, Ph.D.; Ing. Lukáš Rustler
Supervisor's department:	Department of Cybernetics

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	ordinarily challenging
<i>Evaluation of thesis difficulty of assignment.</i>	
The student needed to gather existing information about robot skin on the robot used and get familiar with it. To complete the thesis, the student had to obtain a dataset, train a neural network to recognize individual skin sensors, and merge it with existing information.	

Satisfaction of assignment	fulfilled with minor objections
<i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i>	
The student created a 3D point cloud of taxels from RGB-D images and an approximate and labeled skin model from existing data. However, merging these two was not completed. Also, a more detailed quantitative evaluation is needed.	

Activity and independence when creating final thesis	B - very good.
<i>Assess that student had positive approach, time limits were met, conception was regularly consulted and was well prepared for consultations. Assess student's ability to work independently.</i>	
The student worked independently and steadily. However, given that parts of the assignment were not met, she could have adapted her schedule and worked more intensively in certain phases of the project.	

Technical level	C - good.
<i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i>	
The student independently applied knowledge she gained during her studies, for example about convolutional neural networks. However, the different approaches she tried are not completed, integrated and properly evaluated.	

Formal and language level, scope of thesis	B - very good.
<i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i>	
The work is presented well, with the help of appropriate pictures and schematics. More accurate mathematical formulation of the problem would be sometimes needed to complement the graphical illustration.	

Selection of sources, citation correctness

A - excellent.

Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.

The student correctly identified and referred to existing literature.

Additional commentary and evaluation

Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.

Some information expected to be available by the manufacturers of the skin was missing. That made it harder for the student to complete some tasks, but she was able to partially handle it.

**III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION
SUGGESTION**

The student was able to work independently on the topic and fulfill the assignments. She had to cope with unexpected missing information and also detected some errors in the official documentation for the used skin.

We evaluate the thesis with classification grade **C - good**.

Date: **7.6.2023**

Signature: