

I. IDENTIFICATION DATA

Thesis title:	Object Localization by Spatial Matching of High-level CNN Features
Author's name:	Lukáš Majer
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Control Engineering
Thesis reviewer:	Ing. Viktor Kozák
Reviewer's department:	Intelligent and Mobile Robotics, CIIRC

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>How demanding was the assigned project?</i>	
The work was intended to explore the application possibilities of the SSM framework and to apply it to a completely new problem. It required a deep understanding of the previous framework, neural networks, and 3D vision. Since SSM is a novel and complex computer vision method, this was particularly challenging.	

Fulfilment of assignment	fulfilled
<i>How well does the thesis fulfill 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 original assignment was fulfilled completely. Moreover, the student achieved several additional results outside the scope of the original assignment.	

Activity and independence when creating final thesis	A - excellent.
<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 was able to work independently and efficiently. The progress and direction of the work were regularly consulted and the student always clearly presented the current progress, encountered problems, and intended work.	

Technical level	A - excellent.
<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 provided sufficient background for all related fields (neural networks, 3D vision, object localization, and the original SSM framework). He clearly marks his own contributions and the work is well described.	

Formal level and language level, scope of thesis	A - excellent.
<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 sufficiently extensive and all formalisms and notations are used properly. The level of English is satisfactory. The organization of the work is a little complicated, however, that is to be expected, since the work draws from a wide range of fields.	

Selection of sources, citation correctness	A - excellent.
<i>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?</i>	
Adequate sources and references to earlier work are provided, and the bibliographic citations meet the standards. The student clearly distinguished his own work.	

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 overall quality of the thesis is excellent. The developed approach achieved results comparable to some state-of-the-art approaches. During the course of the work, the student not only determined the benefits of the presented approach in object pose estimation but also identified additional characteristics and possibilities in the original SSM framework, which served for its further development and use in other areas. The student gained a deep understanding of relevant fields, without which it would be impossible to complete the work to such extend.

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.

The student produced excellent work which can be further utilized. I especially appreciate his active approach to the task and his numerous innovations during the work.

The grade that I award for the thesis is **A - excellent**.

Date: **2.6.2021**

Signature: