

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Detection of epileptic seizures in video recordings of laboratory rodents</b>
<b>Author's name:</b>	<b>Bc. Aneta Ambrosová</b>
<b>Type of thesis :</b>	master
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering (FEE)
<b>Department:</b>	Department of Circuit Theory
<b>Thesis supervisor:</b>	Ing. Jan Kudláček, DiS., Ph.D.
<b>Supervisor's department:</b>	Department of Physiology, Second Faculty of Medicine, Charles University

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>ordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
The goal of the thesis was to train existing machine learning tools for the purpose of detection of epileptic seizures in the video recordings of laboratory rats, evaluate the performance of the detector and test transferability between subjects.	

<b>Fulfilment of assignment</b>	<b>fulfilled</b>
<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 was fulfilled.	

<b>Activity and independence when creating final thesis</b>	<b>A - excellent.</b>
<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 hard working throughout the year and discussed the work regularly with me. She was always well prepared for the meetings. She contributed original ideas on possible improvements of the detector. After realizing that the machine learning tools have low performance she developed a deterministic detector. She worked independently and always implemented my suggestions from the meetings.	

<b>Technical level</b>	<b>B - very good.</b>
<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 employed her technical skills appropriately. She used largely correct methods. A possible pitfall was that during the similarity transformation (p. 24), she did not flip video frames in order to get the rat facing always the same direction. She discusses the limitation correctly in the Discussion (p. 86).	

<b>Formal level and language level, scope of thesis</b>	<b>B - very good.</b>
<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 figures required few suggestions from my side. Also, paragraph 6.5.2 would benefit from more figures. The language level is excellent. The thesis is quite extensive since she developed an additional detector on top of the assignment.	

<b>Selection of sources, citation correctness</b>	<b>A - excellent.</b>
<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>	
The student cites 63 references in a standard way. She proved the ability to work well with the literature.	

<b>Additional commentary and evaluation (optional)</b>
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*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.*

Although the resulting detector of seizures has a very poor performance, the thesis has a great value since it show which steps in the detection process work well and which would need more attention.

### 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.*

Aneta demonstrated very good engineering skills and excellent communication abilities. The grade that I award for the thesis is **A - excellent**.

Date: **20.1.2025**

Signature:

