

I. IDENTIFICATION DATA

Thesis title:	Relay feedback identification using GEA for PID control
Author's name:	Adrian Saldanha
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Instrumentation and Control Engineering
Thesis reviewer:	Ing. Pavel Trnka, Ph.D.
Reviewer's department:	U12110.3

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>How demanding was the assigned project?</i>	
Please insert your comments here.	

Fulfilment of assignment	fulfilled
<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>	
All goals have been achieved.	

Methodology	correct
<i>Comment on the correctness of the approach and/or the solution methods.</i>	

Technical level	A - excellent.
<i>Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?</i>	
Student employed pretty well expertise in the field of his work.	

Formal 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 organized in a logical way, the language is very well understandable and relatively clear. The range of thesis is above average.	

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>	

Additional commentary and evaluation (optional)
<i>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.</i>
Please insert your comments here.

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. Pose questions that should be answered during the presentation and defense of the student's work.

The thesis is consistent and well organized. The research part is clear and covers satisfactorily the field of study. The practical part represents much of hard work. In order to compare the Guiding Evolutionary Algorithm (GEA) to the other two swarm algorithms (PSO and BA), the student implemented them in Matlab/Simulink. Then the algorithms were tested on number of functions. Next part of thesis describes identification of dynamic system where the GEA algorithm is used to search parameters of system model. Last part solves parameters of feedback control of identified dynamic system. For this purpose, the identified model is used instead of dynamic system itself. Then, the original system is controlled using the same parameters. Described method has been tested on multiple simulated dynamic systems and also on the real laboratory setup.

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

Date: **3.9.2020**

Signature: