

I. IDENTIFICATION DATA

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| Thesis title: | Path Planning with Different Homotopy Classes in Environment with Obstacles |
| Author's name: | Matej Novosad |
| Type of thesis : | master |
| Faculty/Institute: | Faculty of Electrical Engineering (FEE) |
| Department: | Department of Cybernetics |
| Thesis reviewer: | Robert Pěnička |
| Reviewer's department: | Department of Cybernetics |

II. EVALUATION OF INDIVIDUAL CRITERIA

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| Assignment | challenging |
| <i>How demanding was the assigned project?</i> | |
| The assigned project was quite challenging as the goal was ultimately to beat the state-of-the-art methods. | |

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| 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 parts of the thesis were fulfilled. | |

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| 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 fully independent with his own ideas on how to solve the assigned problem. | |

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| 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> | |
| I think the technical level is of a great standard. | |

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| 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 written in good English and very readable. | |

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| 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> | |
| Student used adequate references and the citations meet the bibliographic standards. | |



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

The thesis presents a method for planning multiple distinct paths with different homotopy class in environments cluttered with obstacles. Student fulfilled all parts of the assignment, the thesis is well readable and the proposed method is shown in experiments to surpass other state-of-the-art methods. Moreover, a short version of the thesis was submitted to IEEE Robotics and Automation Letters journal.

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

Date: **29.5.2023**

Signature: