MINISTRY OF EDUCATION AND RESEARCH

TECHNICAL UNIVERSITY
OF CLUJ-NAPOCA

FACULTY OF AUTOMATION AND COMPUTER SCIENCE
COMPUTER SCIENCE DEPARTMENT

CIP Tool

LICENSE THESIS

Graduate: Teodora Irina MĂRGINEAN
Supervisor: Dr. Eng. Zoltan CZAKO

2021

MINISTRY OF EDUCATION AND RESEARCH

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Graduate: **Teodora Irina MĂRGINEAN**

CIP Tool

1. **Project proposal:** *Short description of the license thesis and initial data*
2. **Project contents:** *(enumerate the main component parts) Presentation page, advisor's evaluation, title of chapter 1, title of chapter 2, ..., title of chapter n, bibliography, appendices.*
3. **Place of documentation:** *Example*: Technical University of Cluj-Napoca, Computer Science Department
4. **Consultants:**
5. **Date of issue of the proposal:** November 1, 2020
6. **Date of delivery:** July 1, 2021 *(the date when the document is submitted)*

Graduate: _____

Supervisor: _____

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din cadrul Universităţii Tehnice din Cluj-Napoca, sesiunea _____ a anului universitar _____, declar pe proprie răspundere, că această lucrare este rezultatul propriei activităţi intelectuale, pe baza cercetărilor mele şi pe baza informaţiilor obţinute din surse care au fost citate, în textul lucrării şi în bibliografie.

Declar, că această lucrare nu conţine porţiuni plagiate, iar sursele bibliografice au fost folosite cu respectarea legislaţiei române şi a convenţiilor internaţionale privind drepturile de autor.

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În cazul constatării ulterioare a unor declaraţii false, voi suporta sancţiunile administrative, respectiv, *anularea examenului de licenţă*.

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Nume, Prenume _____

Semnătura

De citit înainte (această pagină se va elimina din versiunea finală):

1. Cele trei pagini anterioare (foaie de capăt, foaie sumar, declaraţie) se vor lista pe foi separate (nu faţă-verso), fiind incluse în lucrarea listată. Foaia de sumar (a doua) necesită semnătura absolventului, respectiv a coordonatorului. Pe declaraţie se trece data când se predă lucrarea la secretarii de comisie.

2. Pe foaia de capăt, se va trece corect titulatura cadrului didactic îndrumător, în engleză (consultaţi pagina de unde aţi descărcat acest document pentru lista cadrelor didactice cu titulaturile lor).

3. Documentul curent **nu** a fost creat în MS Office. E posibil sa fie mici diferenţe de formatare.

4. Cuprinsul începe pe pagina nouă, impară (dacă se face listare faţă-verso), prima pagină din capitolul *Introducere* tot aşa, fiind numerotată cu 1.

5. E recomandat să vizualizaţi acest document şi în timpul editării lucrării.

6. Fiecare capitol începe pe pagină nouă.

7. Folosiţi stilurile predefinite (Headings, Figure, Table, Normal, etc.)

8. Marginile la pagini nu se modifică.

9. Respectaţi restul instrucţiunilor din fiecare capitol.

Contents

Chapter 1

Introduction - Project Context

The title of each chapter is formatted using Heading 1 style, numbering with one digit (Chapter x. Chapter Name), font Times New Roman, size 14 points, Bold.

This chapter will present:

- Project context
- Specify the precise domain
- Use about 5% of the paper

1.1 Project context

The font used for the text in this document is Times New Roman, size 12 points, as defined in the Normal style, Line spacing equal to 1.0 (Paragraph, Line spacing) and Justify.

The first line for each paragraph must be indented (implicit in Normal Style), and no additional space is inserted between successive paragraphs[1].

1.1.1 Subsection

Each table used in this document is labeled as Table x.y, where x represents the chapter number, and y shows the table number within the current chapter. Leave a blank line between and after each table, relative to the adjacent paragraphs (table 1.1).

Each figure used in the document must be cited within the text (ex: in figure x.y the system components are presented...) and labeled. The labeling must be as Figure x.y where x represents the chapter number, and y shows the number of the figure within the current chapter. E.g.: figure 1.1.

Each chapter must start on a new page.

[1]Sorry for the Word's users. In Latex these are automatically solved.

Table 1.1: Nonlinear Model Results

Case	Method#1	Method#2	Method#3
1	50	837	970
2	47	877	230
3	31	25	415

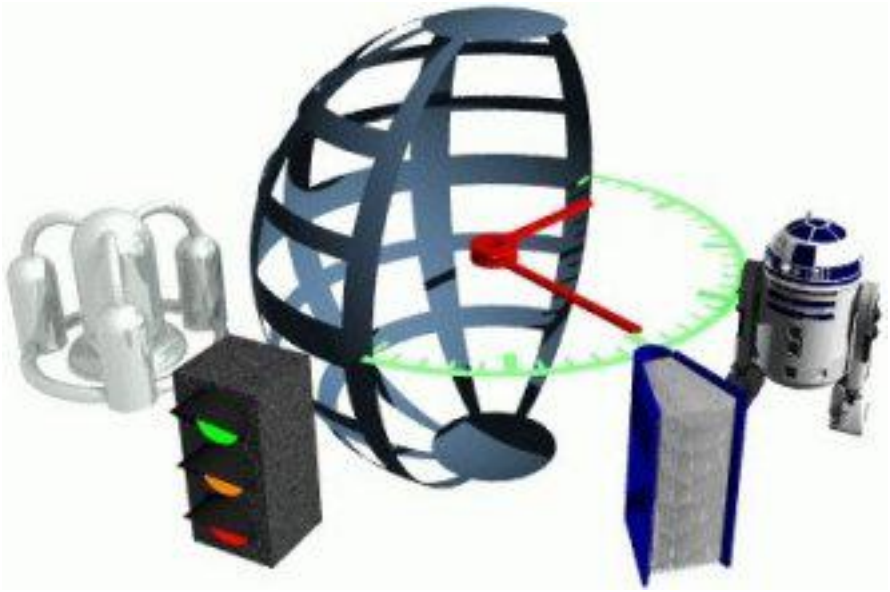

Figure 1.1: The figure‘s name

Chapter 2

Project Objectives and Specifications

Describe the proper theme (as a research/design proposal, clearly formulated, with clear objectives, and some explanatory figures).

Stretches over about 10% of the paper.

2.1 Title

2.2 Other title

Chapter 3

Bibliographic research

Bibliographic research has as an objective the establishment of the references for the project, within the project domain/thematic. While writing this chapter (in general the whole document), the author will consider the knowledge accumulated from several dedicated disciplines in the second semester, 4^{th} year (Project Elaboration Methodology, etc.), and other disciplines that are relevant to the project theme.

Represents about 15% of the paper.

Each reference must be cited within the document text, see example below (depending on the project theme, the presentation of a method/application can vary).

This section includes citations for conferences or workshop [1], journals [2], and books [3].

In paper [2] the authors present a detection system for moving obstacles based on stereovision and ego motion estimation. The method is ... *discus the algorithms, data structures, functionality, specific aspects related to the project theme, etc....* Discussion: *pros and cons.*

In chapter 4 of [4], the *similar-to-my-project-theme algorithm* is presented, with the following features ...

3.1 Title

3.2 Other title

Chapter 4

Analysis and Theoretical Foundation

Together with the next chapter takes about 60% of the whole paper

The purpose of this chapter is to explain the operating principles of the implemented application. Here you write about your solution from a theory standpoint - i.e. you explain it and you demonstrate its theoretical properties/value, e.g.:

- used or proposed algorithms
- used protocols
- abstract models
- logic explanations/arguments concerning the chosen solution
- logic and functional structure of the application, etc.

YOU DO NOT write about implementation.

YOU DO NOT copy/paste info on technologies from various sources and others alike, which do not pertain to your project.

4.1 Title

4.2 Other title

Chapter 5

Detailed Design and Implementation

Together with the previous chapter takes about 60% of the paper.

The purpose of this chapter is to document the developed application such a way that it can be maintained and developed later. A reader should be able (from what you have written here) to identify the main functions of the application.

The chapter should contain (but not limited to):

- a general application sketch/scheme,
- a description of every component implemented, at module level,
- class diagrams, important classes and methods from key classes.

Chapter 6

Testing and Validation

About 5% of the paper

6.1 Title

6.2 Other title

Chapter 7

User's manual

In the installation description section your should detail the hardware and software resources needed for installing and running the application, and a step by step description of how your application can be deployed/installed. An administrator should be able to perform the installation/deployment based on your instructions.

In the user manual section you describe how to use the application from the point of view of a user with no inside technical information; this should be done with screen shots and a stepwize explanation of the interaction. Based on user's manual, a person should be able to use your product.

7.1 Title

7.2 Other title

Chapter 8

Conclusions

About. 5% of the whole
Here your write:

- a summary of your contributions/achievements,
- a critical analysis of the achieved results,
- a description of the possibilities of improving/further development.

8.1 Title

8.2 Other title

Bibliography

[1] E. Bellucci, A. Lodder, and J. Zeleznikow, "Integrating artificial intelligence, argumentation and game theory to develop an online dispute resolution environment." in *16th International Conference on Tools with Artificial Intelligence*, 2004, pp. 749–754.

[2] G. Antoniou, T. Skylogiannis, A. Bikakis, M. Doerr, and N. Bassiliades, "Dr-brokering: A semantic brokering system." *Knowledge-Based Systems*, vol. 20, no. 1, pp. 61–72, 2007.

[3] S. J. Russell, P. Norvig, J. F. Canny, J. M. Malik, and D. D. Edwards, *Artificial intelligence: a modern approach*. Prentice hall Englewood Cliffs, 1995, vol. 2.

[4] W. Strunk, Jr. and E. B. White, *The Elements of Style*, 3rd ed. Macmillan, 1979.

Appendix A

Relevant code

```
 /** Maps are easy to use in Scala. */
object Maps {
  val colors = Map("red" -> 0xFF0000,
                   "turquoise" -> 0x00FFFF,
                   "black" -> 0x000000,
                   "orange" -> 0xFF8040,
                   "brown" -> 0x804000)
  def main(args: Array[String]) {
    for (name <- args) println(
      colors.get(name) match {
        case Some(code) =>
          name + " has code: " + code
        case None =>
          "Unknown color: " + name
      }
    )
  }
}
```

Appendix B

Other relevant information (demonstrations, etc.)

Appendix C

Published papers