

MINISTRY OF EDUCATION



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**TECHNICAL UNIVERSITY**

OF CLUJ-NAPOCA, ROMANIA

**FACULTY OF AUTOMATION AND COMPUTER SCIENCE**

# **THE TITLE OF THE THESIS**

LICENSE THESIS

Graduate: **Firstname LASTNAME**

Supervisor: **scientific title Firstname LASTNAME**

**2023**



**TECHNICAL UNIVERSITY**

OF CLUJ-NAPOCA, ROMANIA

**FACULTY OF AUTOMATION AND COMPUTER SCIENCE**

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**THE TITLE OF THE THESIS**

1. **Project proposal:** *Short description of the license thesis and initial data*
2. **Project contents:** *(enumerarea părților componente) Example: : (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. **Data of issue of the proposal:** November 1, 2022
6. **Data of delivery :** July 8, 2023

Graduate: \_\_\_\_\_

Supervisor: \_\_\_\_\_

**TECHNICAL UNIVERSITY**

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**FACULTY OF AUTOMATION AND COMPUTER SCIENCE****Declarație pe proprie răspundere privind  
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\_\_\_\_\_ legitimat(ă) cu  
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CNP \_\_\_\_\_, autorul lucrării

elaborată în vederea susținerii examenului de finalizare a studiilor de licență la Facultatea de Automatică și Calculatoare, Specializarea \_\_\_\_\_ din cadrul Universității Tehnice din Cluj-Napoca, sesiunea \_\_\_\_\_ a anului universitar \_\_\_\_\_, declar pe proprie răspundere, că această lucrare este rezultatul propriei activități intelectuale, pe baza cercetărilor mele și pe baza informațiilor obținute din surse care au fost citate, în textul lucrării și în bibliografie.

Declar, că această lucrare nu conține porțiuni plagiate, iar sursele bibliografice au fost folosite cu respectarea legislației române și a convențiilor internaționale privind drepturile de autor.

Declar, de asemenea, că această lucrare nu a mai fost prezentată în fața unei alte comisii de examen de licență.

În cazul constatării ulterioare a unor declarații false, voi suporta sancțiunile administrative, respectiv, *anularea examenului de licență*.

Data

Nume, Prenume

\_\_\_\_\_

\_\_\_\_\_

Semnătura

## General Advice

**READ FIRST** (this page should be removed from the final version):

1. If you print the thesis on paper, the three preceding pages (title page, summary page and declaration) should be printed on separate pages (one-side) and should be included in the printed paper. The summary page (the second one) must be signed by the graduate and the supervisor. The date on the declaration should be the date when the thesis is handed to the commissions' secretary.
2. On the title page, you should include the correct scientific title of your supervisor (use the Department web pages to find that).
3. Every chapter begins on a new page.
4. Do not change page margins.
5. Obey the other instructions provided in every chapter.
6. This template obeys all the formatting rules.
7. We included the `hyperref` package to generate navigation links. To produce a version for printing on paper uncomment the line containing `%\hypersetup{hidelinks}` located in the beginning of the main file `thesis_eng.tex`.

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# Chapter 1. Introduction - Project Context

Should take 2 to three pages of the paper.

What should be here:

- framing the design theme in the contemporary context
- an outline of the exact domain of the design theme

## Chapter 2. Project Objectives

Should take 2 to 3 pages.

Here you describe the design/research theme, precisely formulated, with clear objectives on 2-3 pages and, possibly, explanatory figures.

## Chapter 3. Bibliographic Research

This chapter should take between 3 and 10 pages.

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<sup>th</sup> year (Project Elaboration Methodology, etc.), and other disciplines that are relevant to the project theme.

Each reference **must** be cited within the document. Please look at the examples below (depending on the project theme, the presentation of a method/application can vary).

Referințele are incluse în capitolul Bibliografie.

Referințele pot fi gestionate cu JabRef, o aplicație care poate fi descărcată de la <https://www.jabref.org/#download>

Exemple de ce ar trebui să fie incluse în fiecare tip de referință pot fi găsite aici.

Despre erorile comune găsite în online biblioteci de referințe puteți citi aici

În Capitolul 4 din [1], Spitzner discută avantajele și dezavantajele sistemelor hon-eypot.

Referințele vor fi incluse în secțiunea Bibliografie. Formatul referințelor trebuie să fie IEEE, sau similar. Introducerea de noi referințe în secțiunea Bibliografie, și citarea acestora în textul documentului se poate face manual (respectând formatul), dar nu este recomandată deoarece nu este ușor să gestionezi referințele, sau folosind instrumentele menționate în paragrafele din urmă ale acestui capitol.

În secțiunea Bibliografie, sunt prezentate exemple de referințe la conferințe sau articole de lucru [2], articole de jurnal [3], și cărți [4], [1]. Referințele la aplicații sau resurse online (pagini web) trebuie să includă cel puțin o scurtă descriere relevantă în plus față de link-ul [5], și alte informații sunt disponibile (autorii, anul, etc.). Referințele care conțin doar link-ul către resursa online vor fi plasate în footer-ul paginii.

Fiecare referință trebuie să fie citată în textul documentului, vezi exemplul de mai jos (dependența de temă de proiect, prezentarea metodei/aplicației poate să varieze).

În articolul [3] autorii prezintă un sistem pentru detectarea obstacolelor folosind stereo-viziune și estimarea mișcării proprii. Metoda se bazează pe ...*discuss the algorithms, data structures, functionality, specific aspects related to the project theme, etc.* ... Discuție: *pros and cons*.



**3.1. A Section Name**

**3.2. Another Section Name**

3.2.1. A Subsection Name

DO NOT copy technology descriptions here

## Chapter 4. Analysis and Theoretical Foundation

Together with the next two chapters takes about 70% 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 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 SHOULD NOT write about the implementation. YOU SHOULD NOT describe technologies and other things which do not pertain to your project (no fillers, please!).**

### 4.1. A section title

#### 4.1.1. A Subsection title

Every table in the thesis should be numbered as Table  $x.y$ , where  $x$  is the chapter number where the table is included, and  $y$  is the number of the table within that chapter. There should be one empty line after the paragraph preceding the table, and one empty line after the table. Example: in this row we have inserted a reference to Table 4.1.

Table 4.1: Results

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

Every figure used in the thesis should be referred (e.g. Figure  $x.y$  shows the components of the system...) and numbered.

Numbering is like this: Figure  $x.y$  where  $x$  is the chapter number and  $y$  is the number of the figure within that chapter. E.g. , in this row we have inserted a reference to Figure 4.1.

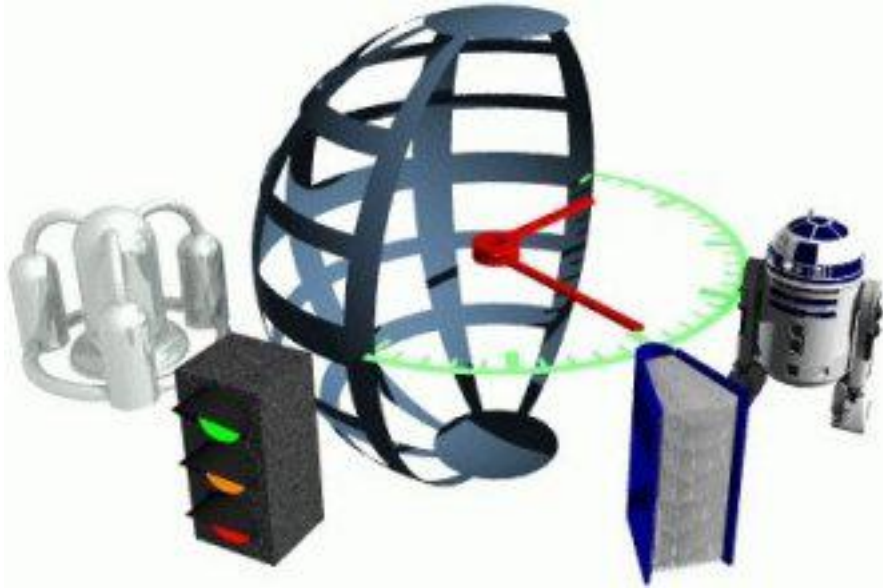


Figure 4.1: Figure name

## Chapter 5. Detailed Design and Implementation

Together with the previous and next chapter takes about 70% 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**

Together with the previous two chapters should take about 70% of the paper.

## Chapter 7. User's Manual

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

Should take 1 to 5 pages.

## Chapter 8. Conclusions

This chapter should take one or two pages.

In this chapter you should include::

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

## Bibliography

- [1] L. Spitzner, *Honeypots: Tracking Hackers*. Addison-Wesley Professional, 2002.
- [2] G. Antoniou, T. Skylogiannis, A. Bikakis, and N. Bassiliades, “Dr-brokering - a defeasible logic-based system for semantic brokering.” in *2005 IEEE International Conference on e-Technology, e-Commerce, and e-Services (EEE 2005), 29 March - 1 April 2005, Hong Kong, China*, 2005, pp. 414–417.
- [3] 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.
- [4] 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.
- [5] Software Freedom Conservancy, “The Selenium Browser Automation Project,” <https://www.selenium.dev/> [Accessed 2021.03.17]. [Online]. Available: <https://www.selenium.dev/>



## Appendix A. Relevant Code sections

```
/** 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 Info**

Proofs etc. if any. Otherwise remove this chapter

## **Appendix C. Published Papers**

If any. Otherwise remove this chapter