**LICENSE THESIS TITLE**

LICENSE THESIS

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|  | Graduate: | **Marius Cristian MĂNĂSTIREANU** |
|  |  |  |
|  | Supervisor: | **todo Adrian GROZA** |

**2014**

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| DEAN, |  | | HEAD OF DEPARTMENT, | |
| **Prof. dr. eng. Liviu MICLEA** |  | **Prof. dr. eng. Rodica POTOLEA** | |

Graduate: **Firstname LASTNAME**

**LICENSE THESIS TITLE**

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, 2013
6. **Date of delivery:** June 28, 2014 (*the date when the document is* *submitted*)

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| Graduate: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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| Supervisor: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Declaraţie pe proprie răspundere privind**

**autenticitatea lucrării de licenţă**

Subsemnatul(a)**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, legitimat(ă) cu \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ seria \_\_\_\_\_\_\_ nr. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   
CNP \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, autorul lucrării \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_elaborată în vederea susţinerii examenului de finalizare a studiilor de licență la Facultatea de Automatică și Calculatoare, Specializarea \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 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.

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

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

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| Data  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | 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 a fost creat în **MS Office 2007.** Dacă folosiţi alte versiuni e posibil sa fie mici diferenţe de formatare, care se corectează (textul conţine descrieri privind fonturi, dimensiuni etc.).
4. **Cuprinsul** începe pe pagina nouă, impară (dacă se face listare faţă-verso), prima pagina din capitolul **Introducere** tot aşa, fiind numerotată cu 1. Pentru actualizarea cuprinsului, click dreapta pe cuprins (zona cuprinsului va apare cu gri), Update field->Update entire table.
5. Vizualizaţi (recomandabil şi în timpul editării) acest document după ce activaţi vizualizarea simbolurilor ascunse de formatare (apăsaţi simbolul **** din *Home/Paragraph*).
6. Fiecare capitol începe pe pagină nouă, datorită simbolului ascuns Section Break (Next Page) care este deja introdus la capitolul precedent. Dacă ştergeţi din greşeală simbolul, se reintroduce (*Page Layout -> Breaks*).
7. Folosiţi stilurile predefinite (Headings, Figure, Table, Normal, etc.)
8. Marginile la pagini nu se modifică (Office 2003 default).
9. Respectaţi restul instrucţiunilor din fiecare capitol.

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# Introduction (Heading 1 style)

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,
* Specification of the precise domain of the license thesis,
* Use about 5% of the paper.

## Project context (Heading 2 style)

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.

### (Heading 3 style)

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 (References, Insert caption->Table)

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| Times new roman ( 12) | Xxxx | xxxx | xxxx |  |
|  |  |  |  |  |

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. Use (References, Insert caption->Figure).



Figure 1.1 Description (References, Insert caption->Figure)

Each chapter must start on a new page.

# Project Objectives

The project theme must be described in this chapter (as a research/design proposal, clearly formulated, with clear objectives 2-3 pages, and some explanatory figures).

Should represent about 10% of the paper.

# Bibliographic Research

**Todo: Write short introduction for this chapter**

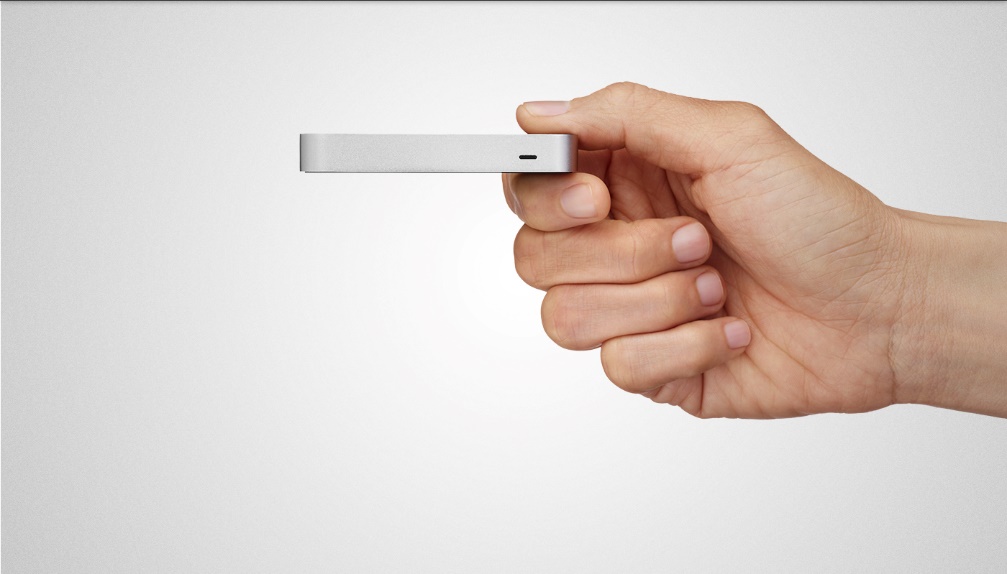
**Todo: min requirements leapmotion.com/setup**

**Todo: google gestures**

## Leap Motion

The *Leap Motion* *controller* is a computer hardware 3D sensor device that supports hand and finger motions as input, but it does not require any hand contact leaving the hand navigate free into the air. The *Leap Motion Controller* senses how you naturally move your hands and lets you use your computer in a whole new way. The *Leap Motion controller* (Figure 3.1) is sleek, light (45 grams) and has relatively small dimensions, being 80 mm long, 12.7 mm tall and having a width of 30 mm [1].

Figure 3.1 The *Leap Motion* *controller*



### Leap Motion technology

The *Leap Motion* *controller* is an input peripheral device with an USB connector. The device uses two monochromatic IR cameras and three infrared LEDs. As we can see from *Figure 3.2*, the *Leap Motion controller* scans a region in the shape of an inverted pyramid centered at the device’s center and extending upwards.



Figure 3.2 *Leap Motion’*s field of view

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, 4th year (Project Elaboration Methodology, etc.), and other disciplines that are relevant to the project theme.

Represents about 15% of the paper.

References will be included in the *Bibliography* section. The reference format must be IEEE, or similar. The introduction of new references in the *Bibliography* section, and their citation within the document text can be done manually (by obeying the format), but it is less recommended, or by using the tools mentioned in the last paragraphs of this chapter.

In the *Bibliography* section, there are examples of references to conferences or workshops articles [1], journal articles [2], and books [3]. References to applications or online resources (web pages) must include at least a short relevant description in addition to the link [4], and other information is available (authors, year, etc.). References that contain only the link to the online resource will be placed in the page footer.

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).

In paper [1] 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 [3], the *similar-to-my-project-theme algorithm* is presented, with the following features…

Software and other tools managing bibliography for **MS Word 2003**, and usage instructions can be found at:

[How to use JabRef (BibTeX) with Microsoft Word 2003](http://www.medicalnerds.com/how-to-use-jabrefbibtex-with-microsoft-word-2003/)

[Bibtex4Word](http://www.ee.ic.ac.uk/hp/staff/dmb/perl/index.html)

[BibWord makes it easier to create and manipulate Microsoft Word citation and bibliography styles](http://www.codeplex.com/bibword)

For **MS Word 2007** and **MS Word 2010**, the integrated bibliography management system should be used, *References, Citations & Bibliography.* More information can be found in the online documentation of MS Office.

# 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 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 (no fillers, please!).

# 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.

# Testing and Validation

About 5% of the paper.

# 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 adorned with screen shots and a stepwise explanation of the interaction. Based on user's manual, a person should be able to use your product

# Conclusions

About. 5% of the whole.

In this chapter you present:

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

# Bibliography

[1] A. Bak, S. Bouchafa, and D. Aubert, "Detection of independently moving objects through stereo vision and ego-motion extraction," in *IEEE Intelligent Vehicles Symposium (IV)*, San Diego, USA, 2010, pp. 863-870.

[2] A. Chambolle and T. Pock, "A First-Order Primal-Dual Algorithm for Convex Problems with Applications to Imaging," *Journal of Mathematical Imaging and Vision,* vol. 40, pp. 120-145, 2011.

[3] R. C. Gonzalez and R. E. Woods, *Digital Image Processing. Second Edition.*: Addison-Wesley Longman Publishing Co., Inc., 2001.

[4] Ajax Tutorial, <http://www.tutorialspoint.com/ajax/>.

# Bibliography

|  |  |
| --- | --- |
| [1] | Leap Motion, „Leap Motion: Technical Specifications,” Leap Motion, 2014.  [Interactiv]. Available: <https://www.leapmotion.com/product>. |

# Appendix 1 (only if needed)

…

Relevant code sections

…

Other relevant info (proofs etc.)

…

Published papers (if any)

etc.