



UNIVERSITÀ  
DEGLI STUDI  
FIRENZE

Scuola di Scienze Matematiche, Fisiche e Naturali  
Corso di Laurea in Informatica

Tesi di Laurea

TITOLO ITALIANO

ENGLISH TITLE

MATTEO BOLLECCHINO

Relatore/Relatrice: *Supervisor's Name Surname*

Correlatore/Correlatrice: *Co-Supervisor's Name Surname*

Anno Accademico 2024-2025



---

CONTENTS

---

List of Figures	3
1 Introduction	7
2 State of the Art	9
3 How to heat the water differently	11
3.1 How did I discover a novel type of heated water . . . . .	11
3.2 How my heated water differs from the previous ones . . .	11
4 Numerical results	13
5 Conclusions and Future work	15
Bibliography	17



---

LIST OF FIGURES

---

Figure 1            Network Security - the sad truth   . . . . . 13



*"Insert citation"*  
— *Insert citation's author*





---

## INTRODUCTION

---

The introduction is usually a short chapter that can be read in less than 10 minutes.

The goal of the Introduction is to engage the reader (why you should keep reading). You don't have to discuss anything in detail. Rather, the goal is to tell the reader:

- what is the problem dealt with and why the problem is a problem;
- what is the particular topic you're going to talk about in the thesis;
- what are your goals in doing so, and what methodology do you follow;
- what are the implications of your work.

The above points will be further expanded in the following chapters, so only a glimpse is essential.

It is customary to conclude the Introduction with a summary of the content of the rest of the thesis. One or two sentences are enough for each chapter.



---

## STATE OF THE ART

---

The State of the Art chapter is where you discuss ... well, the state of the art. Obvious, isn't it?

You have to explain the main research papers related to your thesis and their shortcomings.

It's up to the writer to cite everything or just the sources that are directly relevant to the research topic, and the choice also depends on the kind of thesis work.

For example, one might refer to [?] as one of the first books about algorithms and programming issues, or [?] for the foundations of Game Theory.

Nevertheless, referring to standards (see [?]) for a more accurate technology description is also important.

It is customary to end this chapter by recapping that, given the current state of the art, there is a gap in the knowledge that must be filled - and this is the goal of the present work.

This chapter and the bibliography are an essential part of the thesis. They show that you did your research starting from solid foundations, and they allow the reader to both replicate your results and continue your work. Hence, the bibliography must be good (relevant works of solid reputation) and correct (allow the reader to find the referenced paper).

One of the best ways to do so is to create your bibliography using a tool, e.g., JabRef<sup>1</sup>, which will help you in organising the bibliography. JabRef (or an equivalent tool) will help you in creating a bibliographic database (a so-called .bib file). Only the entries effectively cited will be imported into the thesis with the correct citation style.

A more straightforward way to organise the bibliographic entries of the papers, books, or whatever you cite in the thesis is to just write them into a text file named \*.bib.

---

<sup>1</sup> <https://www.jabref.org>

Note that most websites allow you to download the bibliographic entry of a paper (or book, or whatever) directly. For example, IEEEExplore has a button “Cite This” that allows you to download the entry and copy-paste it into your bibliographic tool. Just select ‘BibTeX’, copy-paste, and you will have the correct entry (well, mostly, always double-check).

Descrizione degli Stackelberg Security Games, facendo riferimento a [2].

Descrizione del processo di CRA, facendo riferimento a [1]

---

## HOW TO HEAT THE WATER DIFFERENTLY

---

This is the ‘main’ chapter of your thesis.

Here you have to show that *your* version of heated water differs slightly from any other known version of heated water, and this is important.

### 3.1 HOW DID I DISCOVER A NOVEL TYPE OF HEATED WATER

Explain in detail what are the steps to heat the water in a novel way.

### 3.2 HOW MY HEATED WATER DIFFERS FROM THE PREVIOUS ONES

Describe why and how your findings are different from the past versions.

Here you might want to add code (see for example Listing 1), or tables (see Table 1).

Note that figures, listings, tables, and so on, should never be placed ‘manually’. Let LaTeX decide where to put them - you’ll avoid headaches (and bad layouts). Furthermore, each of them must be referred to at least once in the body of the thesis.

Table 1: Example table

Country	Country code	ISO codes
Canada	1	CA / CAN
Italy	39	IT / ITA
Spain	34	ES / ESP
United States	1	US / USA

Listing 1: Python example

---

```

import numpy as np

def incmatrix(genl1,genl2):
    m = len(genl1)
    n = len(genl2)
    M = None #to become the incidence matrix
    VT = np.zeros((n*m,1), int) #dummy variable

    #compute the bitwise xor matrix
    M1 = bitxormatrix(genl1)
    M2 = np.triu(bitxormatrix(genl2),1)

    for i in range(m-1):
        for j in range(i+1, m):
            [r,c] = np.where(M2 == M1[i,j])
            for k in range(len(r)):
                VT[(i)*n + r[k]] = 1;
                VT[(i)*n + c[k]] = 1;
                VT[(j)*n + r[k]] = 1;
                VT[(j)*n + c[k]] = 1;

            if M is None:
                M = np.copy(VT)
            else:
                M = np.concatenate((M, VT), 1)

            VT = np.zeros((n*m,1), int)

    return M

```

---

---

## NUMERICAL RESULTS

---

This is where you show that the novel ‘thing’ you described in Chapter 3 is, indeed, much better than the existing versions of the same.

You will probably use figures (try to use a high-resolution version), graphs, tables, and so on. An example is shown in Figure 1.

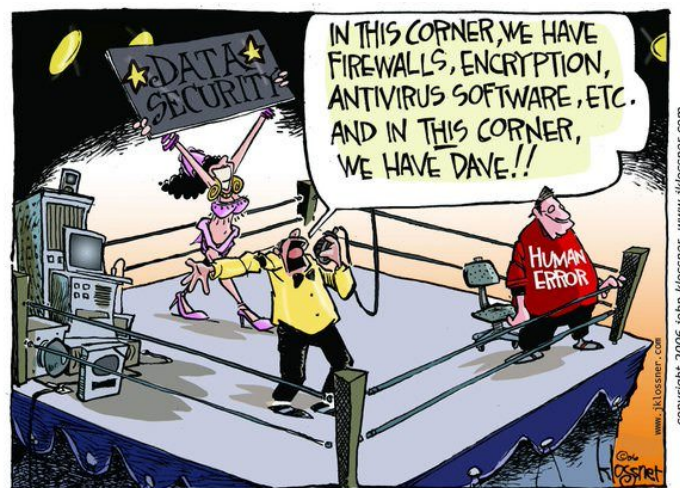


Figure 1: Network Security - the sad truth

Note that, likewise tables and listings, you shall not worry about where the figures are placed. Moreover, you should not add the file extension (LaTeX will pick the ‘best’ one for you) or the figure path.





---

## CONCLUSIONS AND FUTURE WORK

---

They say that the conclusions are the shortened version of the introduction, and while the Introduction uses future verbs (we will), the conclusions use the past verbs (we did). It is basically true.

In the conclusions, you might also mention the shortcomings of the present work and outline what are the likely, necessary, extension of it. E.g., we did analyse the performance of this network assuming that all the users are pedestrians, but it would be interesting to include in the study also the ones using bicycles or skateboards.

Finally, you are strongly encouraged to carefully spell check your text, also using automatic tools (like, e.g., Grammarly<sup>1</sup> for English language).

---

<sup>1</sup> <https://www.grammarly.com/>



---

## BIBLIOGRAPHY

---

- [1] Francesco Brancati, Diamantea Mongelli, Francesco Mariotti, and Paolo Lollini. A cybersecurity risk assessment methodology for industrial automation control systems. *International Journal of Information Security*, 24(2):76, Feb 2025.
- [2] Arunesh Sinha, Fei Fang, Bo An, Christopher Kiekintveld, and Milind Tambe. Stackelberg security games: Looking beyond a decade of success. In *Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence, IJCAI-18*, pages 5494–5501. International Joint Conferences on Artificial Intelligence Organization, 7 2018.