

People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research
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Faculty of Technology
Electrical Engineering department

Documentary Research and Designing a Dissertation

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This course aims to master modern techniques of documentary research and dissertation design, focusing on both theoretical principles and practical implementation. Students will gain the skills necessary to conduct effective research, critically assess sources, and organize their findings into a well-structured dissertation. The course combines academic rigor with practical examples, ensuring that students can apply their knowledge to real-world academic projects.

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General Introduction

Documentary research and the design of final dissertations (PFE) are crucial steps in academic journeys, especially for higher education students. These steps not only require proficiency in research techniques but also the ability to organize, synthesize, and present information in a clear and coherent manner. This course aims to equip students with the necessary tools to effectively approach their final project, from the documentary research phase to writing and defending their dissertation.

The first chapter of this course is dedicated to documentary research. It explores various available sources of information, particularly academic publications, theses, books, and specialized websites. The overabundance of information on the internet necessitates a scientific rigor and an appropriate research methodology to filter relevant and reliable data. A well-defined research topic is essential to avoid the pitfalls of a subject that is either too broad or too narrow.

The second chapter focuses on the design and writing of a dissertation. This phase requires not only thoughtful consideration of the research question but also the selection of appropriate methods and resources. It is crucial to properly structure the work, apply suitable methodologies, and adhere to academic writing standards. The presentation of experimental results and their critical analysis play a central role in the quality of a dissertation.

The objective of this course is therefore to provide students with a comprehensive and integrated approach to completing their final dissertation. It offers a methodological framework for structuring research, organizing data, analyzing results, and presenting solid conclusions while adhering to the required academic standards. With these tools, students will be able to approach their projects with confidence and rigor, contributing significantly to their field of study.

Preamble

This course aims to teach how to approach the theme of a final-year project. We begin by giving an overview of documentary research techniques. Next, we look at how to design a dissertation, highlighting the writing standards and steps to complete a PFE. Finally, all the concepts covered in this course will be applied through the dissection of a final-year dissertation.

Chapter 1: Documentary Research

1.1 Literature Search

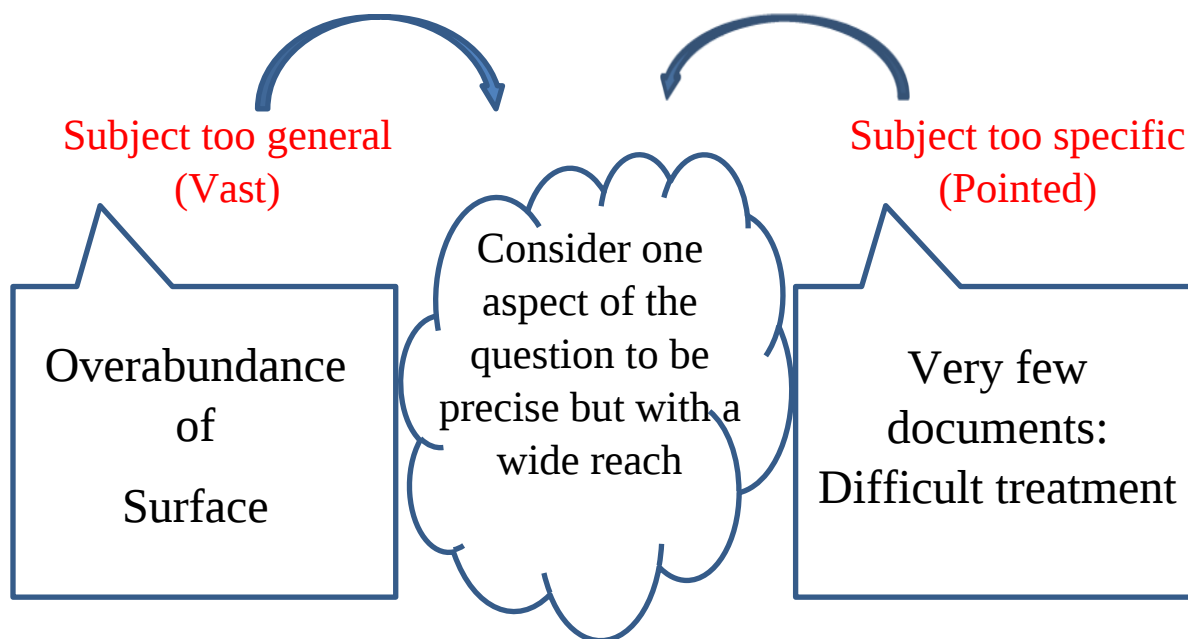
The initial stage in carrying out an PFE is documentary research. This consists of searching for and identifying documents relating to the topic under study. The overabundance of information available on the Web requires using a good research strategy to establish a compromise between the wealth of documentation and the scientific rigour that expresses the quality and reliability of the information.

1.2 Defining of the Subject

To begin documentary research, the subject must be well defined. The definition of a subject for an PFE is done either through an internship or by the teacher supervising you. The first stage is to consult documents that help clarify the subject.

Two possible challenges:

- A subject that is too general (vast)
- A subject that is too specific (pointed)



1.3 Sources of Information

Once the subject is clearly defined, the next step is choosing the best sources of information. For a PFE, four primary sources of information are generally used:

1. Conference papers or publications in internationally renowned journals.
2. Books.
3. Theses (Master or Doctorate).
4. Websites.

1.3.1 Articles:

Whatever the subject, the number of articles available on the web is vast. So, to ensure the reliability of the information, any article whose source is unknown should be discarded.

[So where are the reliable journals with good-quality articles?](#)

The journal and the conference must be sponsored by a well-known publisher such as IEEE, ELSEVIER, SPRINGER, ACM, etc.

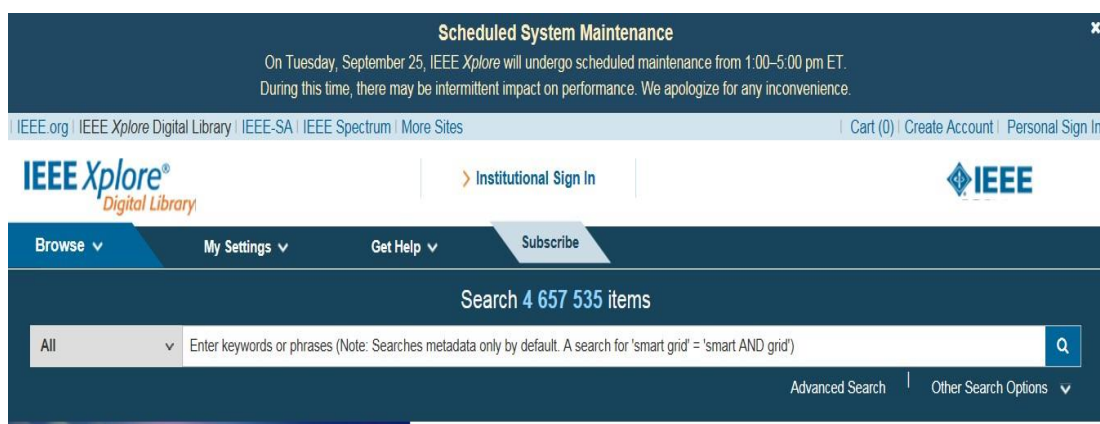
It should be noted that the first three publishers are the primary references for all areas of research addressed by electronics specialists.

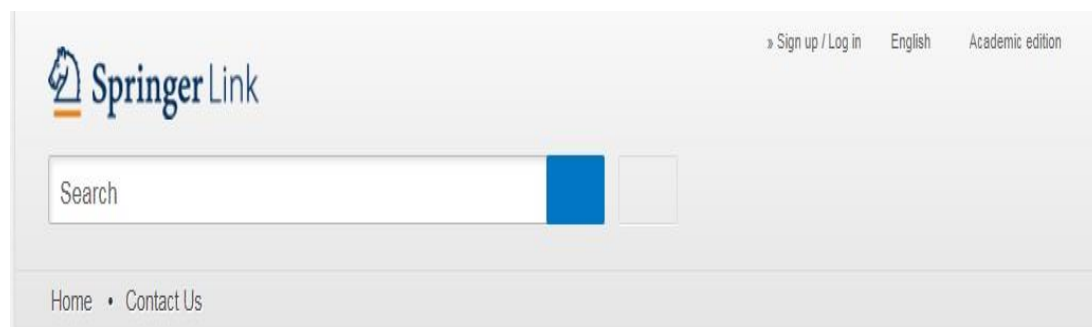
-  Institute of Electrical and Electronics Engineers: IEEE
-  ELSEVIER Company
-  SPRINGER SCIENCE + BUSINESS MEDIA
-  Association for Computer Machinery: ACM
-  Institution of Engineering and Technology: IET



Looking at the publishers we have just mentioned, we can see that each has its bookshop:

- ☐ IEEE: IEEE Xplore
- ☐ ELSEVIER: Science Direct
- ☐ SPRINGER: Springer Link





The articles publication are the support fundamental from the research, because they offer the Advances scientists from theme at terms from methodologies and from results.

IEEE Publication :

IEEE transactions on...

IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, VOL. 32, NO. 9, SEPTEMBER 2010

1705

WLD: A Robust Local Image Descriptor

Jie Chen, *Member, IEEE*, Shiguang Shan, *Member, IEEE*, Chu He, Guoying Zhao, Matti Pietikäinen, *Senior Member, IEEE*, Xilin Chen, *Senior Member, IEEE*, and Wen Gao, *Fellow, IEEE*

Abstract—Inspired by Weber's Law, this paper proposes a simple, yet very powerful and robust local descriptor, called the Weber Local Descriptor (WLD). It is based on the fact that human perception of a pattern depends not only on the change of a stimulus (such as sound, lighting) but also on the original intensity of the stimulus. Specifically, WLD consists of two components: differential excitation and orientation. The differential excitation component is a function of the ratio between two terms: One is the relative intensity differences of a current pixel against its neighbors, the other is the intensity of the current pixel. The orientation component is the gradient orientation of the current pixel. For a given image, we use the two components to construct a concatenated WLD histogram. Experimental results on the Brodatz and KTH-TIPS2-a texture databases show that WLD impressively outperforms the other widely used descriptors (e.g., Gabor and SIFT). In addition, experimental results on human face detection also show a promising performance comparable to the best known results on the MIT-CMU frontal face test set, the AR face data set, and the CMU profile test set.

Index Terms—Pattern recognition, Weber law, local descriptor, texture, face detection.

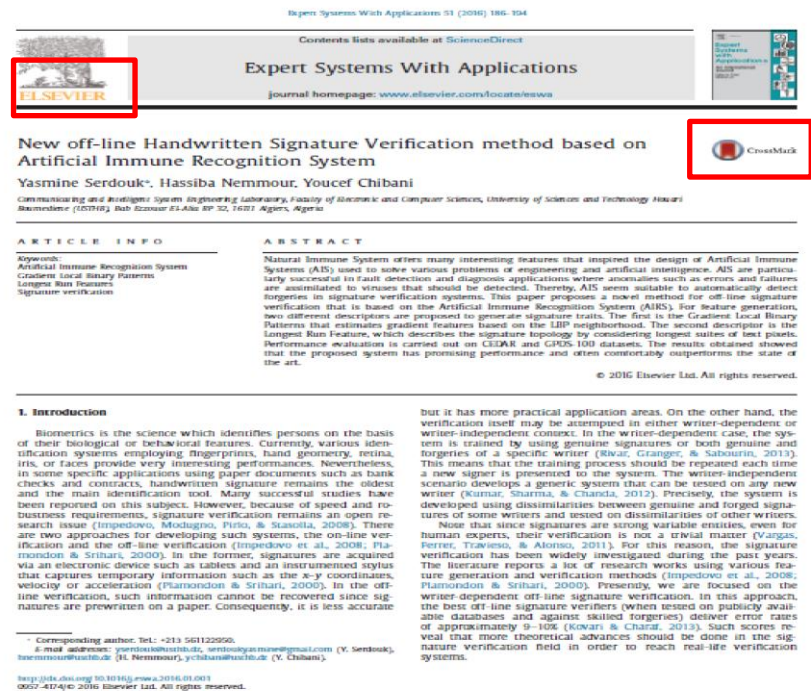
1 INTRODUCTION

RECENTLY, there has been much interest in object and view matching using local invariant features [27], classification of textured regions using microtextures [34], and in face detection using local features [47]. There are several studies to evaluate the performance of these methods, such as [30], [31], [33], [38]. These methods can be divided into two classes: One is a sparse descriptor which first detects the interest points in a given image and then samples a local patch and describes its invariant features [30], [31]; the other is a dense descriptor which extracts local features pixel by pixel over the input image [33], [38].

For the sparse descriptors, a typical one is the scale-invariant feature transform (SIFT), introduced by Lowe [27]. It performs best in the context of matching and recognition due to its invariance to scaling and rotations [31]. Several attempts to improve the SIFT descriptor have been reported in the literature. Ke and Sukthankar developed the PCA-

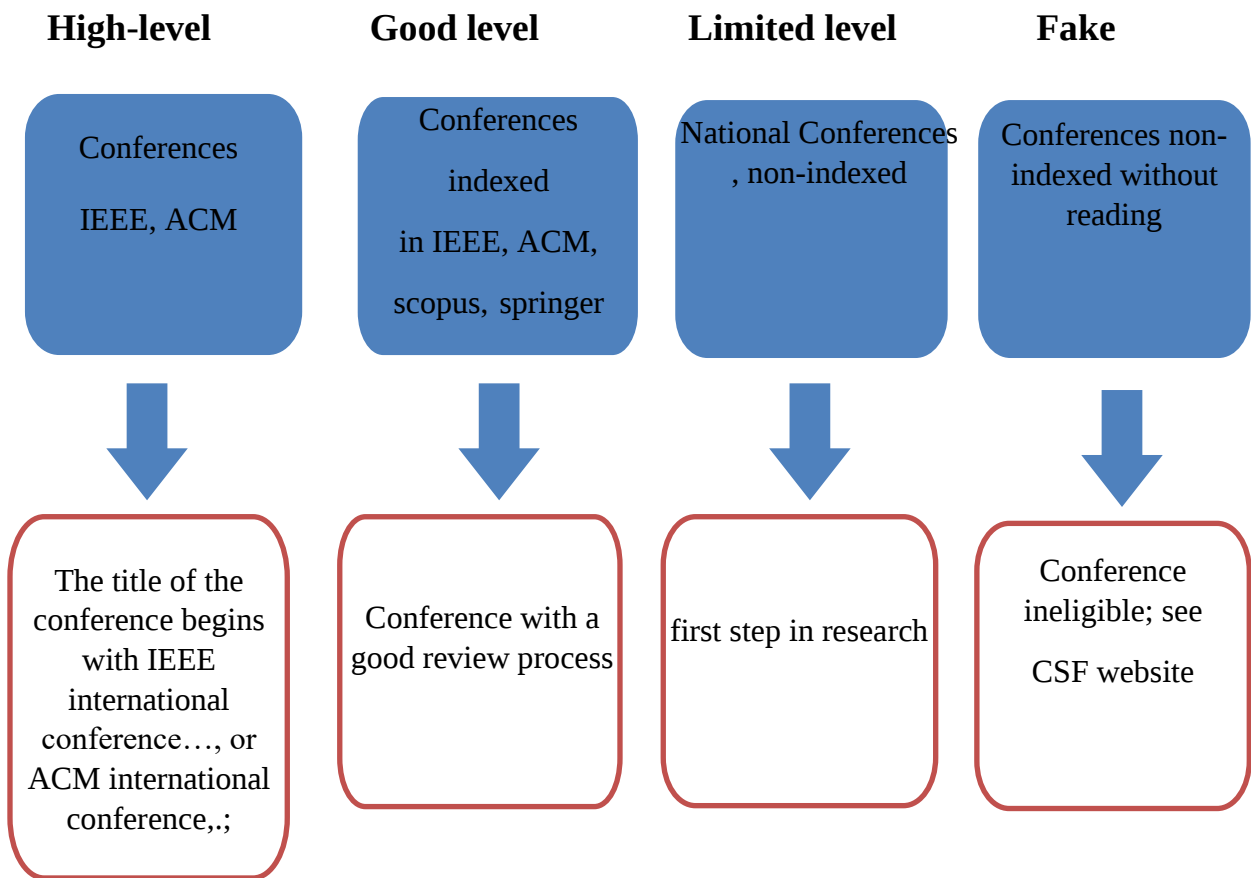
as the quantization parameters of the histograms [31]. Dalal and Triggs proposed a "histogram of oriented gradients" (HOG) [12]. Lazebnik et al. proposed a rotation invariant descriptor called the Rotation Invariant Feature Transform (RIFT) [24]. Bay et al. proposed an efficient implementation of SIFT by applying the integral image to compute image derivatives, and quantifying the gradient orientations in a small number of histogram bins [4]. Winder and Brown learned an optimal parameter setting on a large training set to maximize the matching performance [48]. Mikolajczyk and Matas developed the optimal linear projection to improve the matching quality and speed of SIFT [32]. Likewise, in order to improve the efficiency of the local descriptor, Tola et al. replaced the weighted sum rule used in SIFT by sum of convolutions [44]. In addition, Cheng et al. proposed the use of multiple support regions of different sizes surrounding a point of interest [11].

A more than most popular dense descriptors are the Color



1.3.2 Conferences:

Conferences are classified according to the level of papers presented.



1.4 Objective of Documentary Research

In addition to understanding the fundamental concepts of the subject, documentary research helps to understand the aspect being studied. To produce a dissertation or, more specifically, a thesis, you must assess all the work you have already done on the subject. This makes it possible to establish what is known as a STATE OF THE ART (State of the art, background, related works, etc.). The state-of-the-art consists of listing the various jobs carried out on the theme, illustrating the advantages and, above all, the disadvantages, from which issues or questions still to be answered arise. Therefore, the work of a PFE or a thesis must address a problem or question that is still being asked to propose a solution

1.5 How to Build a State of the Art

For each article directly related to the thesis you must :

1. Determine the contribution of the article:

- ☐ The issues addressed
 - ☐ The proposed solution
 - ☐ Tests carried out
 - ☐ The databases used
 - ☐ The results obtained
2. Write a few lines summarising the content of the article. The summary should contain :
- ☐ The objective, the contribution, the results
 - ☐ Note strengths, weaknesses and limitations

1.6 Conclusion

Once the documents have been collected, they must be read before starting the PFE work. From this reading, we will learn the general concepts related to the theme and will also be able to situate the work of the PFE. In this way, the objective (the contribution of a thesis) will be highlighted. Once this stage has been completed, you can begin the work proposed in the PFE.

Chapter 2: Designing a Final Dissertation

2.1 Initial Question

After completing the documentary research, choose a clear and feasible problem to address in the PFE.

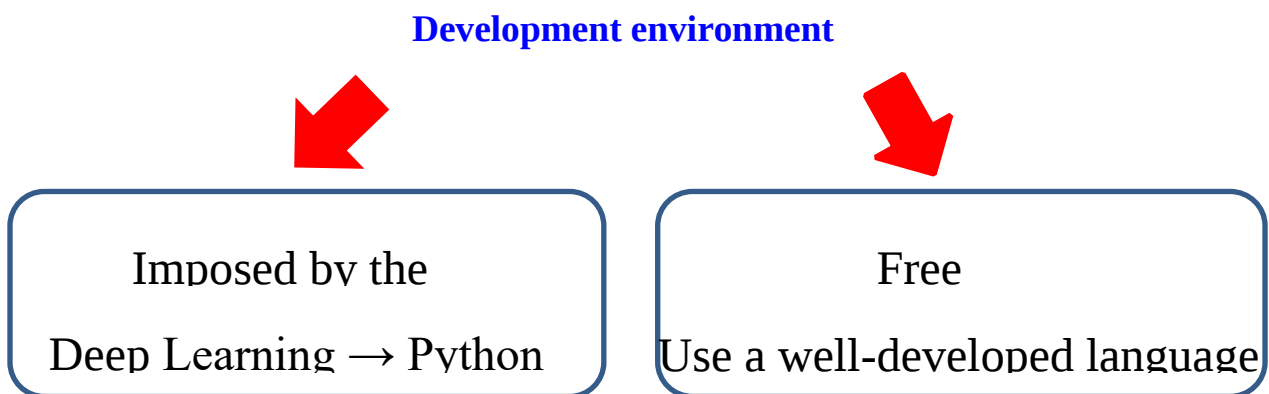
2.2 Exploration Stage

Select the resources for the PFE:

- **Methodologies:** Choose methods or propose improvements.
- **Databases:** Use a benchmark or create a specific database based on experimental measurements.

2.3 Development Stage

This is the core of the PFE. It consists of establishing observations and measures and implementing the chosen methods. Choose a development environment (e.g., Python for deep learning).



2.4 Evaluation and Analysis of Results

In this stage, experimental tests are carried out to evaluate the methods implemented. Note that it is imperative to start with a simulation stage in specific applications, such as telecommunications and RFID (Radio Frequency Identification). Once the development phase is complete, tests are carried out on real data to assess the performance of the implementation. The results are analysed according to objective criteria such as accuracy (pattern recognition), signal-to-noise ratio (audio communication) or visual assessment.

2.5 Writing the Dissertation and Preparing the Defence

The final stage of the PFE is the writing of the dissertation and the preparation of the defence. Whatever the subject, the report must comply with standards relating to the organisation, coherence and even the aesthetic aspect of the dissertation. In addition, the PowerPoint presentation must be a brief and concise summary of the content of the dissertation

2.6 Standards for Writing a Dissertation

To write a dissertation correctly, several organisational and drafting criteria must be respected. A typical brief should contain the following sections:

- Cover page (Format imposed by the department),
- Dedications and thanks (if applicable)
- Table of contents
- List of Figures
- List of tables
- Abbreviations
- Acronyms
- Introduction
- Chapters: The dissertation must contain at least three chapters such as :

Chapter 1: Introduces the general and fundamental concepts of the theme. A summary of the work is presented based on the resources collected during the documentary research.

Chapter 2: This chapter provides a detailed description of the methods adopted. It is, therefore, a question of presenting the theory of the work presented in the PFE.

Chapter 3: This chapter presents the work carried out during the PFE. It should contain a description of the data used, the performance evaluation criteria and the experimental protocol describing how the tests were carried out,

An analysis and discussion of the results follows this.

- Conclusion
- References
- Appendices (if applicable): An appendix should contain a theoretical description, such as a demonstration or algorithm not part of the core methodology but may provide helpful information. For example, in an PFE using the wavelet transform, a reminder of the Fourier transform could be included in the appendix. Additional tests can also be included to make the chapters more accessible.
- Summary: In three languages on the back of the dissertation (For a thesis, the summary is presented on one page before the table of contents).

As introduced at the beginning of this chapter, there are well-known standards for writing a dissertation. This section will summarise these standards and point out some common mistakes.

- Cover page:

Format imposed by the department

- Writing:

A dissertation must be written in black, with 1.5 line spacing and a font size 12, preferably in Times New Roman.

- Table of Contents

It indicates the page numbers of the various parts of the thesis, starting with the introduction. The titles (and subtitles) of the sections are also presented.

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- List of figures and tables:

The chapter number must precede the figure or table number

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- List of abbreviations and acronyms:

This list is necessary if several abbreviations, symbols and acronyms are used in the dissertation.

- Pagination:

The introduction is on page 1 of the brief. For this reason, all the pages preceding the opening are paginated using Roman numerals.

- Headings for the introduction and conclusion:

Liste des Abréviations et sigles

<i>SVM</i> :	Support vector machine (machine à vecteurs de support)
<i>SMO</i> :	Sequential minimal optimisation (optimisation minimale et séquentielle)
<i>RCM</i> :	Reconnaissance des Chiffres Manuscrits
<i>DAC</i> :	Divide and Conquer (Diviser et conquérir)
<i>USPS</i> :	United States Postal Service
<i>OAA</i> :	One Against All
<i>OAO</i> :	One Against One
<i>DDAG</i> :	Directed Decision Acyclic Graph
<i>ADAG</i> :	Adaptive Directed Acyclic Graph
<i>N-SVM</i> :	Neuro-SVM
<i>PSVM</i>	Proximal SVM
<i>RBF</i> :	Noyau Radial Basis Function

Each thesis begins with an introduction and ends with a conclusion. Students often use the terms 'general introduction' and 'general conclusion', which is wrong because the

introduction and conclusion do not have to be general. The word general is an aberration; using just an introduction and conclusion is more correct.

- Titles and headings:

In a dissertation, all section titles, sub-sections, figures and tables must begin with the chapter number in which they are included.

- Comments:

- A title with a number (section or sub-section title) must never end with ":".
- The ":" is allowed in headings that do not have numbers (which have bullets, such as remarks and examples).
- Section and sub-section titles should never be underlined.

- Equations:

The equations must be entered using the equation editor.

Each equation should be placed in the middle of the page, leaving a blank line before

$$Rectangularité = \frac{\text{Surface de la forme}}{\text{Surface du rectangle englobant}} \quad (1.14)$$

and after the equation.

Like titles, equations have numbers that always begin with the chapter number.

The equation number should be placed at the right-hand end of the line.

- Location (Figures, tables, equations):

When writing a dissertation, figures, tables and equations illustrate a method or result. These elements should be placed as close to the paragraph that cites them as possible.

- Figures and tables must be cited in the text before they are presented.
- For example, if we use "x" to designate a signal, we cannot use it to designate the abscissa of a point in another equation.

- Introduction to the brief:

The structure of the introduction to a dissertation should include the following aspects:

- Application context: introduces the topic and illustrates its usefulness. It should highlight the state of the question or the problem posed.
- Motivation: once the question has been asked, you need to explain why you need to find a solution and give the objective of the PFE. This will avoid the systematic questions: Why did you choose this topic? Why did you use this method?
- Contribution: as part of a thesis, the student must produce an original part (their proposal) in their work. The contributions of the thesis work to the state of the art must be made explicit.

Organisation of the dissertation: At the end of the introduction, you should give an overview of how the chapters are organised. The contents of each chapter should be described in one or two sentences to orientate the reader.

- Chapters:

As we have already said, the number of chapters depends on the amount of work carried out and its diversity. If you use methods that draw on different theories, you will likely need two chapters presenting the methodologies. Similarly, if the experimental tests are divided into two sections, it is preferable to include 2 test chapters.

A dissertation must contain at least three chapters, such as:

- Chapter 1: General (State of the art in a thesis)

This chapter should introduce the fundamental concepts and generalities needed to understand the work presented in the following chapters. State of the art: It is necessary in a thesis and consists of citing the work on the theme addressed in the view. It must highlight these methods' advantages, disadvantages and results to situate the thesis work. In a dissertation, the student must include a section (entitled, for example, 'work carried out in the literature') which gives an idea of the methods already used and justifies the method adopted.

- Chapter 2: Methodology

In this chapter, the methods adopted in the work are presented, illustrated by flowcharts, block diagrams and algorithms if necessary. If an improvement or new idea is proposed, it should be left to the end. The most important or effective method should appear last and in greater detail.

Chapter 3: Tests and experimental results

This chapter should reflect the efforts made by the student. To this end, it should contain a detailed presentation of all the tests carried out and an analysis and discussion of the results. Note that even a lousy result sometimes deserves to be commented on. The chapter should begin by presenting the databases and the evaluation criteria. A presentation of the tests follows this carried out and the results obtained. Discussing the results is very important to highlight all the work done by the IEP.

If you are carrying out several tests and experiments, including an "Experimental protocol" section to describe the difficulties you will present in the chapter would be helpful. Finally, you can end the chapter with a conclusion. Still, a paragraph discussing the tests and results (including the difficulties encountered in the experiments and the method's drawbacks) should be placed before the conclusion. Also, if you use benchmark databases, including a table comparing your work with that already carried out is a good idea.

Here is an example of how the state-of-the-art results are presented.

Références des résultats obtenus sur la base USPS

Méthode	Référence	Taux d'Erreur (%)
Réseau de neurones (LeNet)	(Le Cun et al., 1992)	4.2
Perceptron multicouche	(Ayat, 2004)	5.9
K-Means RBF	(Ayat, 2004)	6.7
Réseau RBF	(Ayat, 2004)	4.9
SVM (noyau polynomial)	(Scholkopf, 1997)	4.0
SVM (noyau RBF)	(Scholkopf, 1997)	4.3
SVM (noyau sigmoid)	(Scholkopf, 1997)	4.1
Performance de l'œil humain	(Simard et al., 1993)	2.5
SVM (VSV)	(Scholkopf, 1997)	3.2
KPPV+ distance tangente	(Simard et al., 1998)	2.5
SVM+RBF+ distance tangente	(Haasdonk et Keyzers, 2002)	3.4
SVM+Noyau distance+ distance tangente	(Haasdonk et Keyzers, 2002)	3.6

- Conclusions:

This section can be found at the end of each chapter. However, in specific writing contexts, the conclusion may be replaced by a summary (for example, at the end of chapter 1 if it contains only generalities and therefore

there is nothing to conclude) or a discussion (at the end of the last chapter where the results are discussed since the conclusion of the dissertation will follow this).

Please note:

The conclusion is not a summary, so you should avoid reiterating what has been presented in the chapter.

- Conclusion of the brief:
 - Start by outlining the objective of the work presented, the methods adopted, and the tests carried out.
 - Draw the main conclusions from the tests (avoid repeating what was said in the results section). Even at this level, you can give an accuracy rate, for example.
 - Cite the contributions and improvements proposed in the work (Thesis).
 - Discuss the difficulties encountered (poor results, lack of equipment, implementation difficulties, etc.).
 - Conclude with the prospects for continuing the work and improving the results.
- Bibliographical references:

The bibliographical references section and the citation of these references in the dissertation must comply with particular standards. Firstly, all references must be cited somewhere in the dissertation. The references that may be used are articles, books, theses (and dissertations) and websites.

Two formats for citing references:



APA



MLA

APA format:

A reference is cited by number according to the order in which it appears in the brief (in [1] the authors proposed....). The number [1] is assigned to the first reference cited in the

dissertation. In this case, the bibliographic references section must contain references with the same numbers.

For example:

Boudia, A., Messalti, S., Harrag, A., & Boukhnifer, M. (2021). New hybrid photovoltaic system connected to superconducting magnetic energy storage controlled by PID-fuzzy controller. *Energy Conversion and Management*, 244, 114435.

MLA format:

In this format, references are cited using the authors' names and the year of publication: (In (Watkins, 2011), the author proposed).

Boudia, Assam, et al. "New hybrid photovoltaic system connected to superconducting magnetic energy storage controlled by PID-fuzzy controller." *Energy Conversion and Management* 244 (2021): 114435.

What are the rules for creating the bibliography section?

Each reference must be presented with all the necessary information

➤ Theses and dissertations:

Give the name of the student (two students for the dissertation), the title, and the nature (Examples: PhD thesis in Electrotechnical and information processing, PhD in Computer science, Master Réseaux et

Telecommunications), the university's name, the country (for non-Algerian ideas) and the number of pages.

➤ Publication: An article Journal

The authors' names, the year of publication, the article's title, the journal's name, the volume number and the page numbers must be given.

➤ Article conference:

In addition to the authors' names and the year and title of the paper, we give the name of the conference, its edition number, the city, the date and the page numbers if available.

➤ Book:

The authors' names, title, year, publishing house, and number of pages.

➤ Website:

Give the link and the date of consultation.

2.7 Conclusion

In conclusion, designing a final dissertation is a multifaceted process that requires careful planning, structured thinking, and adherence to academic standards. From formulating a clear research question to choosing appropriate methodologies, the design phase lays the foundation for the entire dissertation. This chapter emphasized the importance of structuring the dissertation coherently, ensuring that each section, from introduction to conclusion, serves a specific purpose in building the argument or answering the research question. Proper design also involves methodically evaluating and analyzing results, ensuring they are presented logically and critically. The final stage of writing and preparing the defense demands careful attention to detail, including the presentation of ideas in a clear, concise, and academically rigorous manner. By following a systematic approach to dissertation design, students are able to produce well-organized, thoughtful, and impactful research that meets the standards of academic excellence. The preparation and planning done in this phase are critical to the overall success of the dissertation and its contribution to the student's field of study.

Chapter 3: Understanding and Avoiding Plagiarism

3.1 Introduction to Plagiarism

Plagiarism is the act of using someone else's work, ideas, or intellectual property without proper acknowledgment, and it is considered one of the most serious violations of academic and research ethics. In academic environments, plagiarism erodes trust, devalues genuine contributions, and disrespects the original creator's effort. As students, researchers, or professionals, it is essential to understand what constitutes plagiarism, how to recognize it, and the steps necessary to avoid it.

The modern academic world, with its vast access to digital resources, makes information readily available. This ease of access, while advantageous for research, also increases the temptation or possibility of unintentional plagiarism. However, regardless of intent, plagiarism is unethical and carries significant consequences. This chapter provides an in-depth exploration of plagiarism, its types, consequences, and the tools and strategies for preventing it.

3.2 Types of Plagiarism

Plagiarism can manifest in various forms, some of which may be more easily identifiable than others. Here are the main types of plagiarism that students and researchers should be aware of:

3.2.1 Direct Plagiarism

Direct plagiarism occurs when a person copies text, ideas, or data verbatim from a source without proper citation. This is the most blatant and easily recognizable form of plagiarism. It can involve copying entire sentences, paragraphs, or even larger sections of work without acknowledgment. Even if a student or researcher changes a few words, this is still considered direct plagiarism if the overall structure or ideas remain unchanged.

Example: Copying an entire paragraph from a research paper and inserting it into a dissertation without using quotation marks or citing the original source.

3.2.2 Self-Plagiarism

Self-plagiarism occurs when a person reuses their previous work, or portions of it, without citing the original work. While it may seem harmless to reuse one's own ideas, it is still considered plagiarism because each piece of work should stand independently, and the expectation is that it contributes new knowledge or perspectives.

Example: Submitting a research paper that includes content from a previously submitted assignment or publication without acknowledging it.

3.2.3 Paraphrasing Plagiarism

Paraphrasing plagiarism is subtler and involves rewording or rephrasing someone else's work without giving them credit. Although the words may be changed, the ideas or structure remain the same, and failing to acknowledge the source constitutes plagiarism. Even if the paraphrase is in your own words, the original source of the idea must be cited.

Example: Rewriting a section of text from an article and failing to mention that the idea came from the original author.

3.2.4 Mosaic Plagiarism (Patchwriting)

Mosaic plagiarism, also known as patchwriting, occurs when someone takes phrases, sentences, or ideas from multiple sources and blends them into their writing without proper attribution. This form of plagiarism often happens when a writer uses chunks of text from various sources, changing only a few words or phrases, creating a "patchwork" of copied content.

Example: Copying parts of several different papers, slightly altering the wording, and combining them into a single essay without crediting the original sources.

3.2.5 Accidental Plagiarism

Accidental plagiarism happens when a writer unintentionally fails to cite a source correctly or overlooks giving proper credit for an idea or piece of information. This can occur due to poor note-taking, misunderstanding citation rules, or simply forgetting to include a reference. While accidental, this type of plagiarism can still result in serious consequences.

Example: Failing to cite a statistic or fact you found in an article because you forgot where you found it.

3.3 Consequences of Plagiarism

Plagiarism is taken very seriously in academic and professional settings, and the consequences can be severe. Even unintentional plagiarism can result in disciplinary action, which is why it is important to understand and avoid it. The consequences include:

3.3.1 Academic Penalties

In academic institutions, plagiarism can lead to various penalties depending on the severity of the offense:

- Failing Grades: Students may receive failing grades on assignments or courses where plagiarism is detected.
- Academic Probation or Suspension: Repeated or severe cases of plagiarism can lead to probation or suspension from the institution.

- Expulsion: In extreme cases, students may be expelled from their academic program or institution.

3.3.2 Damage to Reputation

For researchers and professionals, plagiarism can cause significant damage to their reputation, potentially ruining their career. Being caught plagiarizing could lead to:

- Loss of Professional Credibility: Plagiarism may result in losing respect within the academic or professional community.
- Retraction of Published Work: Journals may retract plagiarized articles, harming a researcher's academic standing and credibility.
- Professional Disgrace: In some professions, such as journalism or academia, plagiarism can result in job loss and an inability to work in the field again.

3.3.3 Legal Consequences

In cases where copyrighted material is used without permission, plagiarism can lead to legal consequences:

- Copyright Infringement: If someone plagiarizes protected content, they may face lawsuits from the original creators or publishers.
- Fines and Legal Actions: Legal actions can result in monetary penalties or other damages for violating copyright laws.

3.4 How to Avoid Plagiarism

Avoiding plagiarism requires diligence, attention to detail, and a solid understanding of research and citation practices. Here are several strategies to ensure your work remains original and ethically sound:

3.4.1 Proper Citation

The most important step to avoid plagiarism is proper citation. Whenever you use ideas, text, or data from another source, you must give appropriate credit. This includes:

- In-text Citations: Use the required citation format (e.g., APA, MLA, Harvard) to acknowledge sources within the body of your text.
- Bibliography or Works Cited**: Include a full list of all the sources you referred to at the end of your work.

3.4.2 Effective Paraphrasing

When paraphrasing, ensure that you genuinely rewrite the material in your own words and provide proper attribution to the original source. Effective paraphrasing goes beyond changing

a few words; it involves reinterpreting the idea in a way that reflects your understanding while still acknowledging the original author.

3.4.3 Use of Quotation Marks

Whenever you directly quote someone's work, use quotation marks and cite the source. This applies even to short phrases or individual words that are unique to the original author's writing.

3.4.4 Plagiarism Detection Tools

Several online tools can help check for unintentional plagiarism:

- Turnitin: Widely used in academic settings, Turnitin checks for similarities across a vast database of academic papers, journals, and other sources.
- Grammarly: This tool also includes plagiarism detection and can highlight sentences or sections that may need citations.
- Quetext: An alternative tool that can help detect matching content across various online sources.

3.4.5 Maintaining Research Notes

One of the best practices to avoid accidental plagiarism is to keep organized research notes. Always record where your ideas or information come from, including page numbers and other details for easy citation later.

3.4.6 Understand Plagiarism Policies

Every academic institution or publisher has its own plagiarism policy. Familiarize yourself with these guidelines, as well as the specific citation requirements for your field or course.

3.5 Best Practices in Academic Integrity

Maintaining academic integrity is about more than just avoiding plagiarism; it's about fostering a culture of honesty, transparency, and respect for intellectual property. Here are some best practices to uphold academic integrity:

3.5.1 Developing Original Ideas

While referencing other people's work is a crucial part of academic research, always strive to contribute new insights, perspectives, or analyses. This means building on existing work rather than simply repeating it.

3.5.2 Proper Collaboration

When collaborating with others, clearly define the roles and contributions of each participant. Ensure that proper credit is given to all contributors, and do not present work done by others as your own.

3.5.3 Seeking Guidance

If you're ever unsure whether something constitutes plagiarism or how to cite a particular source, don't hesitate to seek advice from your professor, a research advisor, or a writing center.

3.6 Conclusion

Plagiarism is a serious academic and professional offense, but it can be easily avoided by understanding its types, consequences, and prevention methods. Practicing responsible research, maintaining detailed notes, and consistently using proper citation techniques will help ensure that your work maintains academic integrity. In doing so, you contribute ethically and responsibly to your field and uphold the values that are central to scholarly work.

Chapter 4: Effective Time Management and Planning for Dissertation Writing

4.1 Importance of Time Management

Time management is a critical skill for successfully completing a dissertation, which is often a lengthy and complex project. Without proper time management, students may struggle with procrastination, missed deadlines, and overwhelming stress. Effective time management allows for a structured approach to the dissertation process, ensuring that all components of the work—research, writing, revisions, and editing—are completed on time. Establishing a clear timeline from the beginning allows students to break down the work into manageable tasks, which can significantly reduce the feeling of being overwhelmed. Proper time management not only leads to a more organized and systematic approach to writing but also provides flexibility to handle unforeseen challenges that may arise during the dissertation process. Ultimately, it improves the quality of the final work by allowing for thorough research and thoughtful reflection, rather than rushed writing just before the deadline.

4.2 Setting Clear Milestones

Setting clear and achievable milestones is a vital part of the dissertation writing process. Milestones serve as checkpoints throughout the journey and help students maintain momentum while tracking their progress. Examples of milestones include completing the literature review by a specific date, gathering research data within a set timeframe, or drafting and revising chapters progressively. These mini-deadlines allow students to evaluate their progress and adjust their work pace accordingly. They also provide a sense of accomplishment as each goal is met, motivating students to continue with the next stage. To ensure that these milestones are realistic, it's important to assess the scope of each task and allocate sufficient time for thorough completion. Flexibility in planning also accounts for unforeseen delays or additional research requirements.

4.3 Creating a Work Schedule

Creating a structured work schedule is essential for managing time efficiently during dissertation writing. A well-planned schedule helps students allocate dedicated hours for specific tasks, such as research, writing, editing, or meetings with supervisors. The schedule should be realistic, considering other academic and personal responsibilities. Students often benefit from using a weekly planner or digital tools like Google Calendar, which can send reminders for upcoming tasks or deadlines. This allows for a balanced work routine, preventing burnout by integrating regular breaks and ensuring productive periods of writing and research. The schedule should also incorporate flexibility, as some tasks, like writing a literature review,

may take longer than expected. By following a clear schedule, students are more likely to maintain steady progress and avoid last-minute rushes before submission deadlines.

4.4 Tools for Time Management

Several tools are available to aid in managing time during dissertation writing. Gantt charts, for instance, provide a visual timeline for project tasks, allowing students to see which tasks need to be completed and when. Trello, Asana, or similar project management software allows students to track tasks, set deadlines, and collaborate with supervisors or peers. These tools help break down the dissertation process into smaller, more manageable tasks, offering reminders and progress tracking. Using such tools encourages accountability and ensures that deadlines are met. Additionally, digital calendars can be used for scheduling meetings or blocking out time for specific tasks, while timers (like the Pomodoro technique) can be employed to focus on work for short bursts with regular breaks. By utilizing these tools, students can work more efficiently and systematically.

4.5 Balancing Research and Writing

Balancing research and writing is essential in the dissertation process, as both components must be integrated for successful completion. Research informs the writing, and writing often reveals gaps that require further research. It is a mistake to focus solely on research at the expense of writing, as this can lead to procrastination or information overload. Students should aim to write while they research, documenting insights and analysis as they go. This iterative process helps in refining thoughts and structuring arguments. Allocating specific times for both research and writing in the work schedule ensures that neither is neglected. Regularly alternating between research and writing helps students maintain momentum and ensures a smoother transition from the research phase to the drafting phase. This balance ultimately leads to a more cohesive and well-supported dissertation.

4.6 Conclusion

In conclusion, mastering time management and planning is crucial for the successful completion of a dissertation. By setting clear goals, creating a structured work schedule, and utilizing tools for tracking progress, students can efficiently manage the extensive tasks involved in research and writing. Breaking down the dissertation process into smaller, manageable milestones not only helps in maintaining steady progress but also reduces the stress often associated with such a significant project. Balancing research and writing is key, as it ensures that both aspects of the dissertation are given adequate attention without one overpowering the other. Time management tools, such as Gantt charts and project management

software, provide valuable assistance in visualizing deadlines and keeping the project on track. Ultimately, effective planning and organization lead to a more focused, thorough, and higher-quality dissertation. By integrating these strategies into their workflow, students can approach their dissertation with confidence and produce work that is not only comprehensive but also submitted on time.

Chapter 5: Ethical Considerations in Dissertation Research

5.1 The Role of Ethics in Research

Ethics in research are the moral principles that govern how a study is conducted, ensuring that all aspects of the research are performed responsibly and with integrity. Ethical considerations are vital in maintaining the credibility of academic work, especially in dissertations. Adhering to ethical standards fosters trust between researchers, participants, and the academic community, ensuring that the research is both reliable and valid. Ethical research practices involve being honest about methodologies, results, and any limitations encountered during the study. Moreover, they ensure that participants' rights are protected and that no harm comes to individuals or communities involved in the research. Violating ethical guidelines can lead to serious consequences, such as retraction of work, legal issues, and damage to professional reputations. Therefore, researchers must be familiar with institutional ethical guidelines and apply them throughout their research journey.

5.2 Research Integrity

Research integrity is fundamental to producing credible academic work. It involves ensuring honesty, accuracy, and transparency throughout the research process. Students must avoid practices such as data fabrication, falsification, or plagiarism, which not only undermine the validity of the research but also the integrity of the researcher. Integrity requires accurately reporting data, acknowledging the contributions of others, and transparently communicating the research methodology, even when results do not align with initial hypotheses. Upholding research integrity fosters trust within the academic community and ensures that future research builds on a solid foundation of reliable findings. Universities often have strict policies on maintaining research integrity, and failure to comply can lead to academic sanctions.

5.3 Informed Consent

Informed consent is a crucial ethical principle in research involving human participants. It ensures that participants are fully aware of the research's purpose, methods, potential risks, and their rights before agreeing to take part. Researchers must clearly communicate this information and ensure that participants provide consent voluntarily without coercion. Informed consent also includes the participants' right to withdraw from the study at any point without penalty. When conducting research with vulnerable populations (e.g., children or individuals with disabilities), additional ethical considerations and protections must be implemented to ensure their safety and well-being. Properly documented informed consent forms are essential to protecting both the participants and the researcher from potential legal or ethical challenges.

5.4 Avoiding Bias and Ensuring Objectivity

Avoiding bias and ensuring objectivity is essential in dissertation research. Bias can occur at any stage of the research process, from selecting participants or sources to interpreting results. Researchers must strive to eliminate personal or cultural biases that could skew findings or lead to misleading conclusions. This requires being aware of one's own perspectives and ensuring that the research design, methodology, and analysis are grounded in objective criteria. Researchers should also seek peer review or feedback from supervisors to help identify and mitigate potential biases. Objectivity strengthens the reliability and validity of the research, allowing it to be generalized or replicated in future studies.

5.5 Confidentiality and Data Protection

Confidentiality and data protection are paramount, particularly when dealing with sensitive information or personal data. Researchers must take steps to anonymize participants' data to ensure that no individual can be identified from the research findings. This includes removing any identifying details and securely storing the data to prevent unauthorized access. In many countries, data protection laws, such as the General Data Protection Regulation (GDPR) in Europe, outline specific legal obligations regarding the collection, storage, and sharing of personal data. Researchers must be familiar with these laws and follow them to avoid legal repercussions. Adhering to these ethical standards ensures that participants' privacy is respected, which is critical to maintaining trust and protecting individuals involved in the research.

5.6 Conclusion

In conclusion, ethical considerations form the foundation of credible and responsible academic research. By upholding principles such as research integrity, informed consent, objectivity, and confidentiality, researchers ensure the credibility of their work and contribute positively to the academic community. The adherence to ethical guidelines not only protects the rights and dignity of research participants but also maintains the trust of the public and academic peers. As students embark on their dissertation journey, understanding and applying these ethical standards is crucial to producing high-quality, reputable research. Ethical lapses can have serious consequences, including academic penalties, legal ramifications, and damage to a researcher's professional reputation. Therefore, students must integrate ethical principles throughout every stage of their research, from the planning phase to data collection and final publication. Ultimately, this chapter underscores the significance of conducting research in an

honest, transparent, and ethically sound manner, which is essential for advancing knowledge and fostering innovation in academia.

General Conclusion

In summary, this course on Documentary Research and Designing a Dissertation provides students with a comprehensive framework to navigate the complex processes of conducting research and writing a dissertation. Through the exploration of essential techniques in documentary research, students gain the ability to identify reliable sources, critically assess information, and build a strong foundation for their academic work. The course also highlights the importance of structuring a dissertation effectively, from developing a clear research question to implementing appropriate methodologies and presenting results coherently.

Time management and planning emerge as crucial skills in ensuring consistent progress and avoiding the last-minute stress associated with large projects like dissertations. By setting realistic goals, using time management tools, and maintaining a balance between research and writing, students are better equipped to meet deadlines and maintain the quality of their work.

Ethical considerations are also emphasized, as integrity, transparency, and respect for participants' rights form the core of responsible academic research. Upholding these ethical standards not only enhances the credibility of the research but also contributes to the advancement of knowledge in a manner that is both respectful and trustworthy.

Ultimately, this course aims to empower students with the skills, knowledge, and tools necessary to approach their final dissertation with confidence, rigor, and professionalism. By integrating these principles into their research and writing practices, students are positioned to produce high-quality dissertations that contribute meaningfully to their academic and professional fields.