THESIS ORGANIZATION AND VALIDATION

When you are about to begin, writing a thesis seems a long and difficult task.....

That is because it is a long and difficult task.



PLAN

1.THESIS PLAN
2. THESIS STRUCTURE
3.THE COMPONENTS
4. THE WRITING PROCESS

1. THESIS PLAN

Structure

Thesis Plan includes the definition of the research question(s) and its motivation, hypothesis, analysis and synthesis of the state of the art, and planning of the research activities.

Recommendation:

- Abstract
- Introduction / background
- Research question and general approach
- Literature review
- Research method
- Aimed contribution
- Detailed work plan and scheduling
- Validation method
- Dissemination plan
- Integration with other research activities
- References

Size: 50-60 pages.

Public defense of the plan

the Thesis Plan must be presented in a seminar of committee
The seminar is open to the public.

After the presentation, there is a discussion between the committee and the candidate.

This event serves to collect feedback / suggestions from the committee... and thus a fundamental element to give the candidate confidence when starting his/her research work.

If the committee considers that the Plan is not mature yet, the candidate may be asked to resubmit if after some months.

2. THESIS STRUCTURE

- In informal talking people call "thesis" the document that is in fact the dissertation.
- In reality a masters project/ dissertation may include more than one thesis.

What is a thesis dissertation?



- Demonstration of a clear understanding of the state of the art
 - Critical appreciation of existing work
- A novel contribution
 - The distinguishing mark of a PhD work is an original contribution to knowledge
 - Your research must discover something previously unknown
 - Not something for which the examiners already know the answer ... and they are experts in the field.
 - Evaluated systematically
- A sound research report, well-written, carefully edited / revised

What a thesis is not?

- A description of what you did in the lab over 1year
 - I first read the background material
 - I then implemented an algorithm
 - I ran some experiments
 - ...

- A "brain dump" of everything you've done
 - You have to leave out the dead-ends and irrelevant aspects (even if you spent a lot of time with them ...)
 - But you have to fill in any obvious gaps!

- A thesis is a logical "reconstruction"
 - Not a historical narrative
 - With a single coherent message

Typical Table of Contents

Preliminaries

- 1. Introduction
- 2. Background information (optional)
- 3. Literature review
- 4. Conceptual contribution
- 5. Experimental developments
- 6. Validation / Discussion
- 7. Conclusions and future work
- 8. References

Annexes (optional)

Some of these sections may include a number of chapters!

SIZE, STYLE, ETC

- A typical size for an engineering thesis is between 50 and 70 pages.
- Language: recommended English, as it can get more readers ...
- Style of writing: A thesis is a formal document.
- Avoid informal writing.
- Recommendation: Have a look at other thesis.

3. THE COMPONENTS

- The actual contents of this part depend on the formatting rules adopted in each university.
- Examples:
- Acknowledgements
- - To people: supervisor, colleagues, other people that helped.
- To funding agencies /projects when resources where provided
- to support your work
- To host institution / Lab, etc.
- Table of Contents
- List of Figures
- List of Tables

- Introduction
- Brief summary of the research question
- Motivation or reasons why it is a worth wile question
- Your hypothesis / thesis
- The reader will be looking for your thesis.
- Examples of good thesis statements
- Make it clear, strong and easy to find.
- The research method adopted (instantiation of scientific method)
- Perhaps an overview of main results
- Not just a description of the contents of each section!

Introduction ...

What a Thesis Statement is Not:

Your Thesis Statement is NOT Your Topic!

- Your topic tells your reader what you are talking about. For Example:
 - I will compare marijuana usage over the last 5 years.

This is not a thesis, it is only A Topic.

Your thesis tells your reader your position on your topic. For Example:

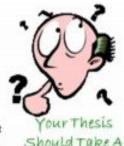
/Marijuana usage has decreased over the past five years due to the successful "War on Drugs."

This is a Successful Thesis Statement A strong thesis should not be too broad, not too narrow

What a Thesis Statement is Not:

You Thesis Statement is NOT A Fact About Your Topic!

- Surprisingly, your thesis should be an arguable OPINION - NOT A FACT!
 - / WHY?
 - Because that is what makes your paper / thesis interesting to your reader!
 - Your thesis should always be a statement that demands PROOF!



STAND

your paper / thesis CONVINCING your reader of why YOUR OPINION is TRUE!

You spend the rest of

Your thesis prepares your reader for the facts that will prove your opinion about your topic to be trueit can not be a fact itself.

4. THE WRITING PROCESS

Main steps

- Plan / elaborate the outline
- Get feedback from supervisor
- Start detailing / organizing the main sections
- After a few chapters, collect feedback from colleagues
- Revise them and start getting feedback from supervisor
- Go through several iterations! THINK-PLAN-WRITE-REVISE cycle
- Write the Conclusions and then the Introduction
- Read the whole thesis to eliminate repetitions
 Read it to verify / improve ideas
 Read it again for editing.

... And carefully take into account the recommendations of your supervisor!

Hints

Generate an Outline:

- A 'plot' for your thesis writing
- Several Pages chapter headings / subheadings / figure titles
- Start with 'fleshing' the structure given
- Target: 'logical story' for the document
- Discuss / revise with supervisor

Results

- Start with Tables/Graphs
 - Make each 'stand alone'.. Detailed legends
- Pick the pictures:
 - What 'tells the story'?
- Describe, then number crunch
- Use Appendices for detailed items

Re-use of your publications

"Can I include material from my publications in my dissertation?"

Yes, you can!

When to start ... and stop

Start soon ...

How long will it take?
... Longer than you expect !!!

- ... Your dissertation is not an application for a Nobel prize
- ... Your dissertation is not the last word on the subject
- ... Trust your supervisor and consider the feedback from your publications

Hints

- Don't start with the Introduction or Conclusion
- Start where you feel happiest
 - Typically a middle chapter
 - Write outwards
 - Finally Conclusions and end with the Introduction
- Write everything with your thesis message in mind

- Get feedback before you write too much
 - One person to read each chapter as it is written
 - Another person to read the thesis in order
- Lay some good groundwork
 - Endnote
 - Indexing
 - ...



