

Guidelines for the preparation of the PhD Thesis Proposal

PhD Program in Computer Science

Departamento de Informática

FCT/UNL

What is the PhD Thesis Proposal?

When students of the FCT/UNL PhD Program in Computer Science are about to conclude their research program and starting to write the thesis they are required to write and publicly present a PhD Thesis Proposal.

In the early phases of the PhD program, the student submits and defends a (preliminary) PhD Thesis Plan, as a requirement for entering the research phase of the program. The Thesis Plan is neither intended to define a fully scheduled work plan nor a concrete set of expected results. On the other hand, a more precise description of results and contributions obtained is precisely what is expected from the PhD Thesis Proposal, to be submitted by the end of the research phase and right before the dissertation writing phase of the PhD Program.

The PhD Thesis proposal is a short monograph (15-25 pages) explaining the performed research work and the results that will be proposed as the core of the forthcoming PhD Thesis. The candidate will orally present and discuss his Thesis proposal with the Thesis Advisory Committee in a public review session (video conferencing is allowed, and even encouraged, in particular if international advisory committee members are involved). The objective of the PhD Thesis Proposal discussion is to assess that the candidate research program is close to a conclusion, that substantial results have already been obtained, and that the overall contributions are adequate for a PhD thesis.

The PhD Thesis Proposal also provides a basis for the Thesis Advisory Committee to advise on all aspects that might led to improvements of the performed PhD research work, including technical and presentation issues. The expected recommendation by the Thesis Advisory Committee is at this point just either a “write the dissertation” or a “continue research” recommendation, together with a written review with comments and suggestions. In the case of a “continue research” decision, the candidate should resubmit the Thesis Proposal after another year of research, following the recommendations of the Thesis Advisory Committee. In the case of a “write the dissertation” recommendation, the Thesis Advisory Committee is acknowledging that the candidate may move towards writing up the thesis. This acknowledgement is only to be seen as a quality assessment point, essentially useful to give relevant advice and further confidence to the candidate, helping to improve the presentation of the work, since the PhD thesis may only be approved after the final submission, and public defense before the PhD evaluation committee. The PhD evaluation committee will be appointed after the thesis is submitted, according to the existing procedures and regulations of UNL PhD Programs, and typically may include members of the Thesis Advisory Committee.

Typical Structure of the Thesis Proposal

The Thesis proposal may be seen as an executive summary of the forthcoming PhD thesis. We find it useful to suggest a general template. The Thesis Proposal document should not exceed 25 pages, and will typically consist of 15-20 pages (excluding bibliography). The student is advised to write his Thesis Proposal using the LaTeX article style, in a4paper format, 11 point font (or equivalent). The section titles suggested below are suggestions, as the most appropriate ones should be chosen for each case.

1. Introduction

The Introduction should include a short summary of the major issues behind the performed research, and provide the context of those issues within a broader background (not only in

academic, but also in industrial/social terms, if possible). It should provide a general overview of the problems solved, the challenges overcome, and the results obtained.

2. Research Context

This section should present a summary survey of the research context in which the work is taking place, covering the technical background and state of the art. The main goal is to give the research context, motivate the issues that have been investigated and solved in the thesis, and justify the relevance and originality of the results.

3. Research Problem and Results

This section should describe the performed research work, including a more detailed description of the problem(s) addressed and ideas and techniques exploited, and a commented enumeration of the original contributions. Use examples to illustrate concepts, whenever that makes sense. This presentation should be anchored in the survey included in the previous chapter, and in already published articles in conferences and journals.

4. Conclusion and self-assessment

This section should include any additional aspects not covered in the previous ones, including possible extensions to the research work already done, open issues, and points for discussion with the Thesis Advisory Committee.

5. References

The list of bibliographic references.

Final Remarks

The assessment of the Thesis Proposal document, its oral presentation, and public discussion is an important event, the final major milestone of the PhD student progress towards the PhD degree. As such, you should carefully prepare your Thesis Proposal, working in close collaboration with the supervisor(s). It is likely that you will need to iterate a few times the precise form of your document, so you should reserve some time to review and polish it before submission. Writing the Thesis Proposal should also be a pleasurable and exciting activity, and it gives you yet another opportunity of presenting your PhD research, and receive feed-back about it, before writing the final dissertation document.
