

Guidelines for the preparation of the PhD Thesis Proposal

PhD Program in Computer Science
Departamento de Informática — FCT NOVA

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What is the PhD Thesis Proposal?

When students of the FCT NOVA PhD Program in Computer Science are about to conclude their research program and ready to write the final thesis document, they are required to produce and publicly present a PhD Thesis Proposal. In the early phases of the PhD program, the student submitted and defended a PhD Thesis Plan, as a requirement for entering the research phase of the doctoral program. While the Thesis Plan was neither intended to define a fully scheduled work plan nor a concrete set of expected results, the Thesis Proposal aims exactly at offering a precise description of the results and contributions obtained during the research work.

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 make an oral presentation and discuss his Thesis Proposal with the Thesis Advisory Committee (or CAT – *Comissão de Acompanhamento de Tese*) in a public review session (video conferencing is allowed, and even encouraged, particularly if international advisory committee members are involved). The objective of this discussion is to assess that the candidate’s research program is close to a conclusion, that substantial results have 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 the aspects that might lead to improvements of the performed research work, including technical and presentation issues. The expected recommendation by the Thesis Advisory Committee is 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 within another year of additional research, following the recommendations of the Thesis Advisory Committee. In the case of a “write the dissertation” decision, the Thesis Advisory Committee is acknowledging that the candidate

may move towards writing the final PhD thesis. This acknowledgement is only to be seen as a quality assessment point, useful to give relevant advice and further confidence to the candidate and to help improving the presentation of the work.

The final PhD evaluation committee will be appointed after the thesis is submitted, according to the existing procedures and regulations of NOVA University of Lisbon PhD Programs, and typically will 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. 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 LaTeX, using either the article style, in *a4paper* format, 11 point font (or equivalent), or the NOVATHESIS LaTeX template (<https://github.com/joaomloureiro/novathesis>). The section titles listed below are suggestions, as the most appropriate ones should be chosen for each case.

1 Introduction

The section 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 and social terms, when 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 survey of the research context in which the work is taking place, covering the technical background and the state of the art. This research context shall 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. It should use examples to illustrate concepts. The information described should

be anchored in the survey included in the previous section 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 second major milestone of the PhD student progress, prior to the PhD degree. As such, the student should carefully prepare her Thesis Proposal, working in close collaboration with the supervisor(s). It is likely that it will necessary to iterate a few times the precise form of your document, so the student should reserve enough time to review and polish it before submission. Writing the Thesis Proposal should be a pleasurable and exciting activity, and the (hopefully) final opportunity to receive useful feedback for improving the final PhD document.