Computer Science Honours
Introduction to Research Methods
Phase 2 — Research Proposal

Prepared by Vashti Galpin
Revised by Sigrid Ewert

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1 Aim

The aim of this phase is to give you experience in the process of preparing a research proposal, and more experience with writing. This will be accomplished by developing a research proposal based on the work that you have done for the Annotated Bibliography and the Literature Review in Phase 1.

2 Instructions

1. From the question proposed by your supervisor in Phase 1 and your Literature Review, determine a suitable research question. Most likely it will be the question proposed by your supervisor, but it could also be a variation on it. You must ensure that the Literature Review has shown that the question is still "open" and worth pursuing.

2. Develop one (or more) focussed research hypotheses from the question and then decide how testing the hypotheses should be accomplished. The scope of the research should be sufficient for an Honours research report.

   You may make any assumptions you like to make the problem a reasonable one to tackle.

3. Your research proposal should include the following chapters:

   - A full introduction with appropriate citations (3 to 4 pages).
   - Background and related research. The Literature Review from Phase 1 will form the core of this chapter. While writing the Literature Review, you may have found that you would need to find additional literature to cover all aspects of the research question. You don't need to read those articles now and add them to the Literature Review. However, add an outline of the sections and subsections you will use, motivation for why you have chosen these sections and a plan for finding relevant literature including the resources you will use and appropriate search terms. (2 to 3 pages).
   - An outline of your research method, including research hypothesis/hypotheses, motivation, and research methodology and how this relates to your research hypothesis/hypotheses. This may be (but must not) presented briefly in bullet point form. (2 to 3 pages).
   - A full research plan, with introduction and conclusion, risks and how these will be managed, as well as a full list of deliverables and time plan with detailed motivation (3 to 4 pages).
   - A document conclusion (1 to 2 pages).

   You should use the Guidelines on the Preparation of the Research Proposal in the Postgraduate Information Booklet of the Faculty of Science for preparing this document. For the time plan, you may assume that you will have to hand in your final Research Report on Monday 16 October 2017. Refer also to Section 5 of this document for additional pointers. Your document should use 11 point text.

3   Submission Deadline

Your research proposal is due by 14h00 on Wednesday 10 May 2017. Submit a hardcopy and a signed declaration; place them in the appropriate wooden box.

Please keep a PDF file, and all `.tex` and `.bib` files until the end of the year; you may be asked for them.

4   Assessment

This task counts 60% of your final mark for the topic.

5   Additional Instructions and Comments

1. You need to state early on the focus of your work, particularly in your abstract and introduction. It is important that the reader can find out early in the document any particular limitations or restrictions pertaining to your research question.

2. It is important to get your chapter introductions and summaries and document outline right so that your reader understands what is coming next and why. It is not sufficient when describing what is about to follow, either in an introduction or an outline, just to list the section headings. You need to go beyond this to direct and guide the reader by giving some idea of the specific content.

3. The introduction chapter should set the scene – it shouldn't be too detailed. Only give definitions if they are necessary to understand the material in this chapter. Someone reading the introduction should get some idea of what the research is about, and then decide to read further for more details or not. You should give an indication of what a solution will be, for example, developing a new algorithm, but without going into too much detail of how you will test the hypothesis. You must use citations to support your statements (within the limitations of this exercise).

4. Your timeplan must be detailed and motivated.

   You need to describe how long each component will take and why each component will take the time you have estimated. It makes sense to link your timeplan with your major deliverables, but to give sufficient detail to your timeplan, you may need to consider events or documents over and above these major deliverables. You should also consider the time for the report write-up.