Guidelines for Dissertation Projects w/ the "Foundations of CL" Lab

Here are some guidelines for prospective candidates for dissertation projects with the "Foundations of Computational Linguistics" group at the University of Potsdam. (Note: These also apply if you are seeking our co-supervision on a project specified by someone else. To a lesser extent, these guidelines also apply for IM projects within your MSc degree.)

As a reminder, the process as specified in the study regulations is that candidates *get assigned* a topic for their dissertation. In the interest of matching students and topics well, we typically coordinate with the student on finding a topic of mutual interest. The study regulations however do not stipulate this, and the topic does indeed have to be of mutual interest.

Please read the following information carefully, to ensure a timely processing of your request.

Step 1: Selecting a Topic

There are two possible modes for dissertation projects: *internal projects*, where my group provides the supervision (and typically both reviewers will be from my group); and *external projects*, where the main supervision will come from some person outside of my group and we only provide one of the two advisors (and later reviewers).

Our preferred mode is the former, but it's more advisable for students who have worked with us before in some form (e.g., doing a research internship, or a project module / independent module, or at least have taken some of our classes). You can infer what areas we are interested in from our publication list. (Some keywords: language and vision; interactive systems; dialogue systems; natural language understanding.) You can also get access to a list of open topics that we'd be interested to supervise, on request.

If you want to go the external route, you need to ensure that you can get the required supervision at your external place (e.g., DFKI, or company), by someone who is actually able to serve as reviewer (that is, at least has the degree that you are working towards, in a related field; ideally, they would have a PhD in a relevant field). Note that the topic still has to be sufficiently close to our research interests, so that we can provide a meaningful review and grade. *Also note that we still expect to be involved to a sufficient degree that possible research outcomes might be published jointly.* It would be advisable to check much in advance that a topic of mutual interest can be found, and to create sufficient contact between the us and the external supervisor.

Note that all data and code that you work with must be made available to us for the purpose of reviewing the final report. We strongly recommend using publicly available data. We typically do not sign Non Disclosure Agreements in connection with student dissertation projects.

Step 2: Provide Relevant Information

After having formed an interest in a topic, please provide us with the following information (using these exact headings / this structure):

- your name & matriculation number
- proposed title or topic area (15 words)
- short description (not more than 300 words)
- how does the topic relate to the research interest of the group? (not more than 100 words)
- prior work (give full reference of 2–5 published works [not just arXiv] that you want to build on); if applicable, reference to existing datasets

- list the classes that you took as part of your degree at Potsdam which relate most closely to the proposed topic? (name of class, semester, teacher)
- [please attach a transcript of your classes so far]
- if external:
    - name of potential external supervisor / reviewer, and further information on them (e.g., website, CV)
    - can you confirm that you will be able to work independently? (You will need to provide a signed statement that this is your own independent work in your dissertation.)
    - what type of supervision / advice to you expect from us?
- tentative timeline: when are you planning to officially register, when are you hoping to submit?
- anything else we should know?

Step 3: Write a Proposal Describing the Project

If a tentative agreement about the topic / area has been reached (after step 2), you will be asked to write a longer document (2–3 pages) about the project. Please structure this document as follows:

- research question(s), formulated as actual questions (what questions is the research supposed to answer); & motivation (why should this be researched?)
- related work: describe the 2–5 published works [not just arXiv] that you want to build on. At least one paragraph per paper, ideally more. Also make use of diagrams & figures where appropriate. This section should make clear how the research questions develop out of this literature.
- work packages and timeline: how do you plan to structure the work?

At this point, you may be asked to present your proposal in my group meeting, to collect more feedback (& potentially find a second supervisor).

Step 4: Formally Apply for Topic to Prüfungsamt

If you've been given the go-ahead after step 3, you can now fill in the form and officially apply to be assigned your topic. (Relevant web site of the Prüfungsamt.) And, congratulations, you are already a significant step closer to completing a successful project.

Step 5: Project Supervision

What you can expect from us:

- Advice on what literature to read.
- Advice on how to set up experiments.
- Advice on how to adapt the plan, should the outcome of experiments not be as expected.
- Advice on how to structure the dissertation.
- (If appropriate, advice & cooperation on writing up results for an academic publication.)

Typically, the advice will *not* be on the level of reviewing code or individual bits of writing.

Here's a rough timeline of when things should happen. (Note: You may have to pull these things rather than get them pushed on you.)

- 2 months after first contact:
    - expose written and approved
    - project idea presented in group seminar
    - project officially registered.
      (Note: We reserve the right to reassing a topic if we haven't heard from a student for too long after initial

interactions.)

- 2 weeks before submission deadline: get feedback on writing sample (several pages, whole chapter for MSc thesis).
- 2 days before disputation (MSc only): get feedback on what to concentrate on in presentation; ideally, get full written review.

Step 6: Writing and Handing in the Dissertation

The official guidelines for BA dissertations say: "not more than 30 pages A4" (for 12 credit point BA modules, as is the case for the BSc CL).

The official guidelines for MA dissertations say: "should in general not be more than 3 pages A4 per credit point". CogSys dissertations are worth 30 credit points.

Please use LaTeX, if you can. Please use (Author Year) citation formatting.

A recurring question is what needs to go in the literature part. Remember that you are not writing a textbook. You need to explain what you are building on. As a rule of thumb, if it's in a textbook already, you don't need to explain it in detail. If it comes from the recent literature, and you're building on it, you do need to explain it. Or if using it would have been a natural alternative, you need to explain it and say why you didn't use it. The point of this part, and any other, is not to teach your audience, but rather to make a justified claim for your work.

A typical structure for a dissertation is (not necessarily with these headings):

- Introduction (What is the research question, and why is it being asked?)
- Related Work (what are you building on; see above)
- Experiment / Model (detailed explanation of what was done; in logical, not necessarily chronological order)
- Results (what was the outcome)
- (The previous two sections can be repeated, if more than one experiment was done and it is better to present the experiments separately.)
- Conclusions & Future Work (on a more general level, to what degree did the work resolve the research question(s)? what would be natural extensions of the work, new questions that it raised, etc.)

If you have good reasons, you can deviate from this structure.

When handing in, the role on our side changes. By default, the main supervisor of the project will become the one of the two reviewers. You can propose someone to be the second reviewer. (There are no regulations that would prohibit this being the second supervisor, but it doesn't have to be.) The final selection will be made by the Prüfungsausschuss.

Please also note that the formal side of the process is in the hands of the Prüfungsamt. They are the ones to talk to about deadlines, mechanics of handing in, etc.

Step 7: The disputation

(Only applicable for MSc.)

The final step, for the MSc, is to have a disputation of the thesis, consisting of a 20 minute presentation and a 30 minute examination. The reviewers as well as one witness will take part. The grade of this is 25% of the final grade for the thesis.

The reviewers have 6 weeks to review the dissertation after you've handed in. (And more realistically, allowing 8 weeks would not be a bad idea.) In practical terms, you should contact the reviewers soon after you've handed in to arrange for a date for the disputation.

Appendix: Documents

Please always consult the pages of the Prüfungsamt, especially the one on procedures on Final Thesis (en) / Abschlussarbeit (de). If you have any questions on these matters, consult with them. Only they can give you legally binding advice.