Master's Thesis Projects in Computing Science at Umeå University

Introduction

A Master's Thesis (MT) Project comprising 20 credits in Computing Science should be included in the degree Master of Science with a Major in Computing Science (Filosofie magister examen med huvudämnet datavetenskap) as well in the degree Master of Science in Engineering with a Major in Computing Science (Civilingenjörsexamen i teknisk datavetenskap). It is possible to do one Project at the C-level comprising 10 credits and one additional Project at the D-level comprising 10 credits but most often students prefer doing one Project at the D-level comprising 20 credits.

Normally 40-50 students start their MT-Project in the Fall semester and 20-30 students start in the Spring semester.

We talk about *external* and *internal* Projects. External Projects are performed outside the Dept of Computing Science (CS), UmU. For example, at a company or at an other department inside or outside UmU. The *external supervisor* (the supervisor at the company etc.) should have good knowledge of the application involved in the Project. The internal supervisor is appointed by CS and his/her major task is to help the student such that the MT-Project and the corresponding report holds a scientific in-depth-study and fulfils the demands of an accademic report at the D-level. Internal Projects are proposed by teachers/researchers at CS. These projects are normally parts of research projects and there is only one supervisor, the supervisor appointed by CS. A list of proposed internal MT-Projects can be found at this link (partly in Swedish).

The aim of this document is to create a kind of check-list. Hopefully this list can support both students and supervisors in their work to finish the project and the MT-report in time – which is 20 weeks full time work for a 20 credits project.

Below you find a short description of the demands for a MT-Project and the specification of a MT-Project, respectively. Moreover, some other "facts" are given and the document is ended by the check-list that researchers and teachers at CS have created in co-operation.

Demands for a Master's Thesis Project in Computing Science

A scientific in-depth-study comprising 3-4 credits should be included in a MT-Project at the D-level, either in a 20 credits project or in the 10 credits D-level project. Normally an in-depth-study is performed as information retrieval over scientific litterature and the web on a subject closely related to the project. The in-depth-study can be reported in two different ways. Either included as natural parts of different chapters in the MT-report or as a separate chapter. In the cases where two students co-operate in a MT-Project comprising 2*20 credits they should do an in-depth-study each of them. Note that the report on the in-depth-study should not only describe the litteratur uncritically but you should also report on your own thoughts and reflections of the material.

Demands for a specification of a Master's Thesis Project in Computing Science

The specification should shortly describe:

- what should be done: exploited, investigated, evaluated, implemented etc.

       - what should be studied in the in-depth-study
       - preliminary time table
       - where (at what company, department) will the MT-project be performed
       - who is the external supervisor, his/her addresses and phone no. at the company
       - name of the student and her/his addresses
       - when will the project start

Unfortunately, many specifications are too general and lack some information when a student presents the specification for the first time to the responsible teacher (kursansvarig). In such cases the specification might be accepted in principle and the student has to complete the specfication in 1-2 weeks and send it to the responsible teacher.

Regular times for oral presentations
Oral presentations of MT-projects take place in the end of September, November, January, March and in the beginning of June.
Normally, the presentation take place on the last Friday in the given months (except for June when it is Friday in the first week). Sometimes there are so many presentations such that we have to use the preceeding Thursday as well. Before the presentation the internal supervisor should have approved the MT-report for oral presentation. That should be done about 2 weeks before the oral presentation since you should send in your MT-report (web address) to the responsible teacher 10-14 days before the current presentation. Exact dates for oral presentations can be found on the home page of MT-projects at CS.
Normally, every student who orally presents her/his MT-project should also act as an opponent of a fellow student's report at the same period as when the presentation is done.

Information on the web
-   The home page of MT-projects: http://www.cs.umu.se/education/examina/ (partly in Swedish)
-   Lists of all printed MT-reports:
    http://www.cs.umu.se/education/examina/klaraExjobb.html (partly in Swedish)
-   The responsible teacher administrates a list of "all" ongoing MT-projects at
    http://www.cs.umu.se/education/examina/current.html (partly in Swedish)
    It is your responsibillity to provide a web address where you describe your MT-project.

Accomplishment of MT-projects in Computing Science
It is important that the student and the internal supervisor get in contact at an early stage of the process. Especially the in-depth-study should be discussed and approved by the internal supervisor. Also the outline and disposition of the MT-report should be discussed at an early stage such that the views of the internal supervisor can be taken into consideration. Hopefully we can support students in their work with the MT-project by writing a check-list that should be used by the student and the internal supervisor.
We split the work with the MT-project in three phases: The initial phase, the carrying out phase, and the finishing phase.

Check-list for MT-projects in Computing Science at Umeå University
The initial phase
- When the internal supervisor is appointed the responsible teacher mails the student (copy to the internal supervisor) and tells who is the internal supervisor and gives the web address of this document. See http://www.cs.umu.se/education/examina/ExjobbKravDV_eng.pdf or http://www.cs.umu.se/education/examina/ExjobbKravDV_eng.htm
- If a more detailed specification has not been sent in the responsible teacher reminds of that should be done within 1-2 weeks. Moreover, you are encouraged to report regularly to the internal supervisor
- The internal supervisor contacts the external supervisor, gives the web address of this document and, if this is justified, a talk is scheduled
- The internal supervisor and the student should agree on an in-depth-study. Mostly this study should be done before the implementation starts
- The student tells the responsible teacher the web address where the MT-project is documented. A good way of documenting your work is by writing a diary on the web. You don't have to write every day, a weekly period will do. See examples at http://www.cs.umu.se/education/examina/current.html (partly in Swedish) Unfortunately some students not bother about documenting their MT-work on the web or maybe they forget to tell the responsible teacher the web address. A mimum of information on the web should be the extended/detailed specification and a preliminary title of the MT-project. The internal supervisor should remind the student if no information is given on the web.
- During summer time, e.g. between June 25 and August 8 many internal supervisors go on vacation. Be in contact before her/his vacation period starts and discuss how the work should continue during that period.

The carrying out phase
- If the student don't report regularly the internal supervisor should mail the student and possibly the external supervisor to know what has happened. Has the student taken a brake, when will he/she continue, has she/he given up etc.
- Two months, at the latest, after the start of the MT-work, the internal supervisor should demand to see an outline of the MT-report. This will encourage the student to start writing at an early stage of the work and the views of the internal supervisor come in time.
- There are some web documents that students (and supervisors) should read in connection with report writing. Many useful tips and ideas can be found at the home page of the course Student Conference in Computing Science. See http://www.cs.umu.se/kurser/TDBD18/ Some sub-links on the home page of MT-projects holds Power Point presentations on how to performe a MT-project (only in Swedish)

- Under http://www.cs.umu.se/education/examina/riktlinjer.html (only in Swedish) there is a generic disposition of how to outline a MT-report
- Lars-Erik Janlert at CS has written a check-list that might be used when reading a MT-report. See http://www.cs.umu.se/education/examina/checklista.pdf (only in Swedish)
- One of the sub-links of http://www.cs.umu.se/education/examina/riktlinjer.html gives advises and hints for doing oral presentations and oppositions. The opposition should be documented on 1-2 pages that is handed to the author (and the responsible teacher) after the oral opposition

Finishing phase
- After the oral presentation the student is responsible for delivering a printable MT-report where the oppinions of the opponent have been considered. By printable MT-report we mean a machine readable document (doc, pdf, ps etc.) that contains the report prepared for two-sided printing including some possible blank pages such that Abstract, Contents and Introduction begin on a right-hand side when printed
- This printable MT-report should be approved by the internal supervisor and then sent, by the student, to the responsible teacher. Then the course Master's Thesis Project (Examensarbete) is reported Pass in Ladok, and the report is printed. The author will get 5 copies of the report. Remember to tell the mail address where to send your 5 copies if you cannot pick them up at our student expedition at CS. Some copies are stored at CS.