ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

igl
INTERACTIVE GEOMETRY LAB

Guidelines for Bachelor/Master Theses at IGL

1 Starting a thesis at the Interactive Geometry Lab

1.1 Topics

There is a list of available topics for bachelor and master theses on the IGL webpage: http://igl.ethz.ch/teaching/theses/index.php. For every topic, we list a specific advisor from IGL; Prof. Olga Sorkine-Hornung will be the supervising professor. While we try to keep the list of topics updated, it is not meant to be exclusive. If you are interested in a particular area of computer graphics, you can also contact Prof. Sorkine-Hornung or other IGL members working on that subject and discuss with them about further possible topics.

1.2 Registration

The supervisor should record the following information: student's name, address, phone, immatriculation number, birth date, project starting date, project title, supervisor. Master theses must also be registered at the department no later than one week after the start of the project with the official form and the signature by Prof. Sorkine-Hornung. The student should add the Bachelor/Master project on myStudies.

1.3 Task description

After you have decided on a topic and secured the agreement of the supervisor to be your advisor, the supervisor writes a detailed task description together with you. We have an appropriate LaTeX template and examples of such documents at IGL. The task description should be handed to the department administration a week before the start of the project. It should be structured as follows (on a single A4 page or maximum 1.5 pages):

- Motivation of the project, some background information
- Description of the work packages
- Exact start and end times
- The grading scheme

1.4 Copyright agreement

It is necessary that the student grants ETH the right of usage for the code and software written during the project. For this purpose, the supervisor will have you sign a copyright form when starting the project. By signing this agreement, the student does not lose any right of ownership or usage of her work. The agreement is kept in folder, together with the task description and the grading form. For theses carried out within industry projects, special copyright and IP agreements might be necessary. The supervisors will inform students before the start of the thesis.

1.5 Workspace

While working on a thesis at IGL, you may use a workstation in the sans-lab (CAB E81) which is reserved for that purpose and which has the necessary software installed. Space is available on first-come first-serve basis. Further information about the lab is listed here: https://ivc-support.ethz.ch/Main/ResGeneralInfo. Your thesis supervisor will help you get access to the lab.

2 During the project

2.1 Meetings

At the beginning of the project, the supervisor will organize a start meeting with the student and Prof. Sorkine-Hornung. Throughout the duration of the thesis, the supervisor will hold regular (usually weekly) meetings to monitor the progress and help with questions and issues that may arise. Prof. Sorkine-Hornung will join these meetings on a regular basis, depending on the nature of the project.

2.2 Documentation of the project

The student will maintain a Wiki page where she will document her progress, post meeting notes from the weekly meetings with the supervisor, intermediate results, etc. The Wiki will be visible to the student, the supervisor and Prof. Sorkine-Hornung only. Details about how to access the Wiki will be provided by the supervisor.

3 Presentations

Toward the end of a bachelor or master thesis at IGL, the student is required to give a final presentation of her work. The date for the presentation will be fixed by Prof. Olga Sorkine-Hornung in agreement with the supervisor and the student.

3.1 Contents of the final presentation

The focus of the final presentation is the technical description of the work. The style of the presentation is comparable to an academic conference talk or a product presentation at a company for a technically experienced audience. We highly encourage the students to make a short live demonstration of the software that was developed, if possible. The structure of the presentation depends on the actual topic, but should roughly contain the following:

- duration max. 25 minutes
- description of the technical background
- a brief overview of related work on the topic
- discussion of alternative solutions with advantages and disadvantages
- motivation of the approach that was chosen
- detailed technical description of the approach
- identification of novel contributions
- examples and results
- critical evaluation of the results and the chosen approach: advantages, disadvantages, limitations, strengths and weaknesses
- software demonstration
- evaluation of the initial timeline ("Have I reached the goal of my project?")

The presentation should be done using PowerPoint slides using the IGL template available here: http://igl.ethz.ch/teaching/theses/IGL-theses/IGL-thesis-16by9.pptx.

4 Written report

A written report, documenting the work with text and images, is required for each bachelor and master thesis. The report should have 30-60 pages for a bachelor thesis and 50-100 for a master thesis. Essentially, it contains: the task, the contents, the body (description of concepts and solutions, as well as a manual for the software), optionally an appendix (e.g., for details of the implementation), and a bibliography. Examples of such reports are available in the library or can be obtained from your supervisor. Before writing the report, the content has to be agreed upon with the supervisor. The

report is corrected at least once by the supervisor before its final submission. This holds for bachelor as well as master theses.

4.1 Guidelines

The master/bachelor thesis must be written using LaTeX and compiled into the PDF format (using e.g. `pdflatex`). The template for an IGL thesis is available here: http://igl.ethz.ch/teaching/theses/IGL-theses/IGL-thesis-LaTeX-template.zip. You should discuss the thesis with your supervisor and hand in an electronic draft prior to the thesis end date, allowing sufficient time for the supervisor to comment on the draft and for you to incorporate the comments. No further corrections are allowed after the official thesis end date. Also note that, per ETH rules, the thesis must include a signed copy of the "declaration of originality" (https://www.ethz.ch/content/dam/ethz/main/education/rechtliches-abschluesse/leistungskontrollen/declaration-originality.pdf).

4.2 Paper version

The thesis must be submitted in two paper copies. One copy should be a bound version, preferably with black back cover, for Prof. Sorkine-Hornung, whereas the second one may be a cheaper paperback version with a spiral binding for the direct supervisor. Both should contain a color "teaser" image on the front page. The thesis can be printed at VPP and the binding in the required formats can be done at the ETH Druckzentrum. Since the required formats are a little more expensive than others, the student may get 40 CHF from IGL. This can be requested from the IGL administrative assistant after everything has been completed according to Section 5.

5 Handing in the thesis and Cleanup

The student has to send the final PDF version of the thesis to the student administration and to the supervisor and Prof. Sorkine-Hornung before the deadline. Other deliverables (paper version and a digital copy as explained below) can be submitted at the presentation or shortly after. The thesis will only be graded after all the deliverables have been submitted.

5.1 Digital hand-in

At the end of every bachelor or master thesis, a digital project folder needs to be submitted (a flash drive, as a download link or by some other means, so that we can copy it to our system at ETH). The digital submission should contain all electronic material of the thesis. It should contain a reasonable directory structure. All data such as software (source code, executables, libraries), documentation (all LaTeX files and images necessary to compile the thesis, as well as the PDF of the thesis) and oral presentations (Power Point slides including all video material) should be included. A thesis is considered to be finished (and naturally can only then be graded) when the final written report as well as the digital submission have been submitted to the supervisor.

5.2 Source code

The final source code should be structured clearly and a documentation for the code must exist. Furthermore, it must be possible to directly compile all source files as they are on the CD/digital submission. Executables must run without problems. If necessary, readme files should be created.

5.3 Work place

The work place in the sans-lab should be clean. All paper and other material from the student should be removed.

5.4 Final meeting and Grading

Similar to the beginning of the thesis, there will be another short meeting with the supervisor and/or Prof. Sorkine-Hornung. This meeting must be coordinated by the supervisor. The student will be informed about her grade by the supervisor.

6 Grading

The grading scheme for Master theses is as follows:

- 6.0: Work and results are publishable at international workshops/conferences.
- 5.5: Thesis quality significantly exceeds expectations.
- 5.0: Thesis meets expectations.
- 4.5: Thesis partially meets expectations and has minor deficits.
- 4.0: Thesis meets minimal quality requirements; it has major deficits and it is clearly below expectations.

The grading scheme for Bachelor theses is as follows:

- 6.0: Extraordinary quality, the results are much higher than expected.
- 5.5: Thesis results are very good; student expanded on the original theme.
- 5.0 Thesis meets expectations.
- 4.5 Thesis partially meets expectations and has minor deficits
- 4.0 Thesis meets minimum quality requirements; but has deficits and is below expectations.