

General Project Information (version 3)

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General questions: Alexey Gronskiy alexeygr@inf.ethz.ch

1 Introduction

The project serves the purpose to gain a hands-on experience with the methods proposed in the course and come up with some useful, non-trivial combination and extension of those.

We like to emphasize that the project has a very “free” character and it follows an educational goal without a competitive component.

The project a) has a non-obligatory character and b) for those who decide to take the project it will by no means decrease the final course grade.

The final grade will be computed according to the formula

$$\text{FINAL} = \max\{\text{EXAM}; 0.7 \cdot \text{EXAM} + 0.3 \cdot \text{PROJECT}\}$$

(distribution of the project grade over the team members is equal).

We have prepared two projects:

- “Segmentation of neuron bundles from Diffusion MRI” (by Viktor Wegmayr, vwegmayr@inf.ethz.ch)
- “Semantic clustering of English nouns” (by David Tedaldi, dtedaldi@student.ethz.ch)

The project handout includes datasets and report templates. After implementing your experiments you should summarize the results into a report of 5 pages, and prepare a short oral presentation.

Datasets are not split into training and test sets: as in a real life setting, you have to design your experiment, validate your method and write your report and give a “convincing” oral presentation.

2 Teams and Hand-In

Projects are intended to be performed in teams of up to 3 (or 4, if the circumstances will need that; it will be announced additionally) people. We encourage you to form teams on your own (for the sake of comfort etc.), however those who don't manage to find their team or intensively want to be shuffled should write to Alexey Gronskiy alexeygr@inf.ethz.ch

As a hand-in you're asked to give us:

- Working code (out of the box; see grading objectives below)

- A report of around 5 pages which would very clearly describe the process of project implementation (template will be made available)

3 Dates and the Process

- Project descriptions will be made available in a week of April 25, 2016.
After that time you're welcome to make up your mind on teams.
- Project introductions will be carried out in the lecture class on Monday, May 2, 2016.
- After that point you will have 1–2 days to register for the project notifying Alexey Gronskey alexeygr@inf.ethz.ch and either stating your team list and a desired project **or** asking for being "shuffled" (attached to another team).
- We assign projects (stated by teams as desired, but not necessarily for the sake of balancing) and deliver the datasets to. You start!
NB: due to technical limitations and sizes of both datasets we don't store datasets publicly.
- Deadline on code and reports hand-in is set on Friday, May 27, 2016.
- Presentations will be given during the last tutorial on Monday, May 30, 2016.

4 Overview of Grading

There will be some mapping to the standard 6.0 points scale from the 100 points scale, the latter being defined by the following table.

	Excellent	Good	Fair	Failed
report writing (20%)	16-20	11-15	6-10	0-5
implementation (30%)	26-30	18-25	11-17	0-10
originality (30%)	26-30	18-25	11-17	0-10
oral presentation (20%)	16-20	11-15	6-10	0-5

Table 1: Scoring for the different project categories. For the explanation see below.

The conversion table mapping the scores to actual grades follows the approximate scaling "excellent" = [5.5 - 6.0], "good" = [4.75-5.25], "fair" = [4.0-4.5], "failed" = [1-3.75].

The sections below give a rough overview about the semantics of the points.

5 Report Writing

- 20: Background, method, and experiment are clear; language is good.
- 15: Background, method, and experiment are clear; may have minor issues in one or two sections; language is good.
- 12: Explanation of work is clear, and the reader is able to identify the novelty; minor issues in one or two sections; minor problems with language; has all the recommended sections in howto-paper.
- 9: Able to identify contribution; major problems in presentation of results and or ideas.
- 6: Hard to identify contribution, but still there; one or two good sections should get students a pass.
- 0: Unable to see novelty.

6 Implementation

- 30: Software works out of the box, documentation clear, reproducible results are obtained.
- 25: Minor issues to get software working; results in paper not easily available, but it is believable that they are obtained from software; has all sections recommended by howto-paper.
- 20: Minor issues to get software working; one or two minor problems with documentation or style.
- 15: Missing README, documentation, or poor naming resulting in confusing code; solution hard coded and manual intervention required for other data.
- 11: Software (after minor changes) can produce some meaningful solution.
- 0: Software not working or unclear how to obtain solution.

7 Originality

- 30: Elegant proposal, either making a useful assumption, studying a particular class of data, or using a novel mathematical fact; some extension of the methods proposed in the reference/course material.
- 25: A very non-obvious combination of ideas presented in the course, or inclusion of an idea from a published paper not discussed in the course.
- 20: A novel idea or combination not explicitly presented in the course.
- 15: An attempt to make a combination of the exercise and lecture ideas/methods.
- 11: Just one idea taken and implemented; an attempt to expand it was described but not implemented.
- 0: Novelty completely missing.

8 Oral Presentation

The teams will be asked to prepare a 5–10 minutes presentation on the methods they used, obstacles they faced and on the overview of the process.

These presentations provide a live discussion opportunity and they provide grading information for the TAs.

- 20: Presentation is clean, structured, explains the process of the project workflow; it covers issues faced, their solutions, as well as project failures and weaknesses; questions from the auditory are answered in an active way; it explains who contributed and in which way; the presenters manage to convince the auditory that the work was done with the sufficient level of independence; the presentation encourages some discussion.
- 15: Presentation lacks a bit of solidity, however tries to cover the above mentioned points; clear attempt to make a good message to the auditory.
- 12: Presentation is badly structured but at least covers the workflow and explains the creation process; the overview is given in a very limited manner, not covering all advantages and disadvantages.
- 9: Presentation is badly structured and it is not clear from it how the project was implemented.
- 6: Presentation leaves an impression that the solution to the problem was not well understood by the team members themselves.
- 0: No presentation or apparently not prepared presentation.