

3/4/2023

## Term Project – Phase 1: Proposal

Formulating and submitting a well thought Proposal is the first deliverable of your Term project. Your Proposal should: (a) summarize the paper / research and respective openly available dataset (single-cell RNAseq) that you have selected to focus on, and (b) present what will be the objective and scope of your proposed data analysis. You are free to select any paper you find interesting to you in the general area of single-cell biology/bioinformatics that has been published in a reputable journal during the last five years and provides the data set for further analysis. You should study the paper carefully, understand the authors' objectives, technical approach, and main claims, and think of what you could contribute before you start writing your proposal.

Every project team (2 students max) should submit one Proposal document with the following structure:

Title page - Your Names, Your ID Numbers, Paper full citation and link to text and data

1. What is the problem studied in the paper you selected?
2. Why it is important? What is the state of the art in this topic?
3. What are the data analysis methods and tools used and the main results claimed by the authors?
4. What is your motivation for your additional analysis?

What is your working hypothesis?

Will you try to first validate and then extend the presented work in some interesting ways?

Outline the steps you plan to follow and justify your planned work.

5. Your technical approach: What ML methods you plan to use and why? What programming language(s) and libraries /packages you plan to use (should be R and/or Python).
6. Your implementation plan: Outline the analysis tasks and the team member roles in each task. Include a mitigation plan if things go wrong.
7. References with links as needed (do not upload the paper files or the data).

By the deadline, please upload your proposal document (Word and PDF form) of no more than 5 well-written pages (11pt font, 1.15 space) as part of a .zip file along with the paper you are studying (do not upload the respective dataset).

The class project should be completed during the semester before the examinations period and the results will be presented in class (more details on that will be provided later).

Exercise effective teamwork so that you can share the load and work smoothly as a team while capitalizing on the strengths of each team member. All team members should participate in preparing the deliverables that means: the proposal, presentation(s), and final report.

The proposal will constitute 20% of your class project grade. The rest will be divided between the data analysis performed, the class presentation, and the final report.

Deadline for uploading your proposal .zip file to eClass: Friday **28/4/2023**