EOSC510/410: Expectations and grading rubric for class projects:

Assessment:

Presentations of research projects:

Towards the end of the course, students are expected to select a dataset they want to perform research on with the use of analytical/modelling tools from the course. During the final two weeks, undergrad students will present the final results of their projects, while grad students will present their preliminary (or final) results and will receive feedback/comments from the instructor to further incorporate in their final reports. The reports should show the final results of the projects.

Final project report:

Final outcomes of the data-oriented research projects are to be synthesized in a written report.

Evaluation:

EOSC 410: 90% of the final project grade will come from the presentation, and the remaining 10% comes from the dataset overview and project proposal previously submitted to the instructor.

EOSC 510: 40% of the final project grade will come from the presentation, 50% will come from the report, and the remaining 10% comes from the dataset overview and project proposal previously submitted to the instructor.

Evaluation rubric: Presentations

Each student (or team) will present the outcome of the research projects to the class orally in a short (< 10 min) presentation. This presentation should be designed to inform your audience about the objectives of the project and to show your results.

Important note: the evaluation will be based on how well you included the content in your slides, NOT on presentation skill/style/etc. I will listen to the presentations in class and then grade the slides.

In your presentation, include slides with the following content:

(1) Title

(2) Introduction that includes:

- research questions

- few sentences on the relevance of this study

(3) Methodology that shows:

- data description (+ a figure showing an example of the raw data)

- if used, describe any pre-processing methods applied to the data (e.g. filtering, averaging, standardization, etc)

- explain the rationale for your choice of data analysis and/or empirical modelling methods

(4) Results

- show results of the pre-processing steps (if applied) and final methods

- provide answers (as figures, tables and text) to each of your research questions

(5) Conclusions

- summary of the results

- discussion on limitation and successes of the analysis

The following rubric will be used to evaluate your presentation (content on the slides):

Marking scheme for each of the questions below: Excellent (1-0.9); Very good (0.9-0.8); Good (0.8-0.7); Sufficient (0.7-0.6); Poor (<= 0.6)

Introduction (Objective and brief data description & background info):

1) How clear is the objective (research questions)?

2) How well can the questions be understood by non-experts (i.e. students/scholars who are not in the same field of research as yours)?

3) Do you provide background info (relevance) to motivate the study?

4) How clear is the description of the data (e.g. input variables, spatial and temporal domain and

resolution)? (Make sure that you include data sources, e.g. links or references, on your slide)

Methods:

5) How reasonable is your choice of the data analysis method(s), i.e. did you choose the right tool to work on this project?

6) How clearly do you describe the application of selected methods/tools to your data?

7) Is the chosen pre-processing of the data correct and necessary, and does it make sense for what you are trying to do?

Results:

8) How well do you show the results (e.g. figures showing the initial data and pre-processed data, i.e. actual input to the method/model) and do the results make sense?

9) How well do you show some (preliminary or final) results from the applied method (data analysis and/or modeling) and do the results make sense?

10) How good is the quality of figures/tables (captions, scale, clarity, visibility)?

11) How well can you interpret the preliminary results and demonstrate your understanding of the method(s) you used (e.g. if you use PCA that you understand what the modes, eigenvectors, PCs represent for your data; if you use empirical modelling that you understand how the model is calibrated/validated/tested)?

Conclusions:

12) How well do the results (aim to) answer your research questions (objectives)?

13) How well do you explain what you learned from the project (e.g. performance of the method/model, successes and limitations of the methods you used) and does the explanation make sense?

14) For EOSC510 students only: How well do you explain the outlook of the future work for this project and does it make sense?

Evaluation rubric: Project reports (for EOSC510 students only)

Each grad student (or team) will submit a short report (6-8 pages and 1500-2500 words, including figures/tables) on the research projects. I am not specifying a format that the report must follow, but I strongly suggest an abstract and the inclusion of all major components (see the rubric below). Any figures and tables (or codes) that you want to include in the report, but are not part of the key results, should go in the appendix. The appendix content, however, will not be evaluated.

Recommended sections for the reports:

(1) Title and abstract

(2) Introduction that includes:

- research questions

- relevance of this study

(3) Methodology that shows:

- data description (+ a figure showing an example of the raw data)

- if used, describe any pre-processing methods applied to the data (e.g. filtering, averaging, standardization, etc)

- explain the rationale for your choice of data analysis and/or empirical modelling methods

(4) Results and discussion

- show results of the pre-processing steps (if applied) and final methods

- provide answers (as figures, tables and text) to each of your research questions

(5) Conclusions

- summary of the results

- discussion on limitation and successes of the analysis

(6) References

The same evaluation rubric from presentations (see above) will be used for the reports. The report should show final (not preliminary) results of the class project.