EEE 485/585 FALL 2023
TERM PROJECT

Procedure

Form your group or work individually: You can choose to work individually or form a group. Size of the group can be at most **2.** E-mail the members of your group to TA Artun Saday (e-mail: artun.saday@bilkent.edu.tr) by **October 9, 2023, 11.59pm.** The title of the e-mail must be "**EEE 485/585 Fall 2023 project group**".

Write a project proposal: Write a **1- or 2-page** project proposal. Which machine learning task do you want to accomplish? Which datasets do you plan to use? What challenges do you expect? (If you like, you could also test your selected algorithms on multiple datasets and try to figure out what methods work for different types of data). It is recommended that you use Python. **The deadline is October 16, 2023, 11.59pm.** Don't hesitate to contact the course instructor or TAs if you have any questions before writing the proposal. One week after your submission, TAs will provide feedback about your proposal. You might need to revise and resubmit your proposal based on the feedback. If revisions are requested, the deadline to submit the revised proposal is **October 30, 2023, 11.59pm.**

Prepare The First Report (6-8 pages, total contribution: 8%) This report must include problem and dataset description, review of the machine learning methods that you are going to implement (in your project, you should try at least three different algorithms for your task or combine some of these three algorithms together to solve your task. These methods and the reason for their choice must be stated), challenges you expect. You should clearly describe the expected contribution of each group member to the project. By the time you submit this report, you should have a very clear idea of which methods you are going to use, what challenges you expect, and how you are going to validate the performance of the methods you will use for the given dataset.

You must include a detailed description of the methods used, description of the dataset, methods you used to train your algorithms, simulation setup, preliminary simulation results such as the time it takes to train your algorithms, accuracy & performance figures, and a discussion on the performance of the considered methods. In practice, you are expected to complete half of the project by this time. **All used codes must be included in the appendix and must be uploaded to Moodle**. You must write your own code as a group. Copying the code from somewhere else or using the code of another group is not allowed. Deadline for the First Report is **November 20, 2023, 11.59pm**. Group members are also required to perform a demo (to the TAs of the course). Performance in the demo will affect the points you will get from the report. The date and time of the demo will be

announced later. You are required to shape your Final Report according to the given feedback.

Prepare The Final Report (8-12 pages + appendix, 22%): The Final Report should include revised versions of everything included in the First Report, a conclusion section, and all the revisions performed according to the feedback given to the First Report (including the feedback given during the demo). The deadline for the Final Report is **Dec 18, 2023, 11.59pm**. Group members are also required to perform a demo. Performance in the demo will affect the points you will get from the report.

Several Important Remarks

- The project proposal and reports must be submitted to Moodle by the deadlines specified below to be admitted to the final exam (FZ condition).
- In all your reports use 11pt fonts, single column, single spacing. Font should be Times New Roman.
- Plagiarism is strictly prohibited. If plagiarism is detected the entire group will fail from the project and the course. Disciplinary action will be taken. Collaboration of any kind between groups is not allowed. Copying of code from somewhere else is not allowed.
- While implementing your algorithms you **cannot** use custom build machine learning libraries (only exception is the approval of the instructor and proof that you have already coded necessary learning algorithms yourself). This allows you to understand the principles behind these algorithms.
- There is a possibility that some of the group members decide to withdraw the course. If such an event happens, the remaining group members must continue the project.
- You will be evaluated as a group. Hence, the group members should ensure that every group member is prepared.
- Your project will be evaluated based on the complexity of the chosen methods, their fit to the problem, your explanation of the chosen methods, performance of the chosen methods, and the quality of the content.
- In all your reports use **11pt fonts, single column, single spacing. Points will be deducted if this format is not adopted.**

I wish you a very successful term project!

Cem Tekin