Assignment: Final Project

Assignment Overview

The final project asks you to apply machine learning techniques to solve an application problem. It is an ideal platform to practice what you have learned from the course, and to introduce you to research on machine learning applications. You need to work in a team of two to three students on this project.

Applications in any area are welcome in this project. You are encouraged to propose new and interesting applications. Any machine learning techniques are welcome in this project, but you are expected to find the appropriate ones and justify your choice. The scale of the project should be significantly larger than the homework problems. You are expected to go through the entire research cycle of the project, including problem formulation, literature review, algorithm implementation, testing, paper writing, and presentation.

How You Will Be Graded

Proposal	5 points
Progress Update	5 points
Final report	10 points
Final presentation	10 points
Total	**30 points**

What to Hand In

- **Proposal:** a 1-page document and a 5-min presentation in class describing what you want to do, why you want to do it, and how you plan to do it for the project. A tentative week-by-week plan with a task allocation plan among teammates should be included. As time goes on, it is OK to deviate from your original plan and even the topic. But having a plan is better than not having a plan. Submit the proposal as <firstname>_<lastname>_Proposal.pdf. This assignment will be evaluated based on how well the problem is formulated and how clear your description is.
- **Progress update:** a 20-min presentation with Q&A to the instructor and TAs, updating what you have done, what results you have achieved, and what needs to be done. Make it clear who did what in the team. Apparently, this presentation should also introduce the project in the beginning. Your presentation will be evaluated based on the amount and quality of work you have done and the clarity of the presentation. No file needs to be submitted.
- **Final report:** A report describing your project. Your report should be organized as a research paper, with abstract, introduction, method, experiments, conclusions, and references. Use the ICASSP conference paper template to write your report. Latex and Word templates can be downloaded at https://2023.ieeeicassp.org/paper-submission-guidelines/#Templates. Please be complete, concise, and clear. Submit your report as <firstname>_<lastname>_FinalReport.pdf together with code and example data to run the code. This assignment will be evaluated based on the amount (30%), depth (30%) and novelty (10%) of your work and the clarify of the writing (30%).
- **Final presentation:** This will be an oral presentation of your project to the class. The length of the presentation will be decided later based on the number of projects and the

total time we have. The presentation session will be organized as a conference session. Students will take turns to present and answer questions from the audience. The audience will be your classmates, the instructor, TAs, and possibly some faculty and PhD students in ECE. Your presentation will be evaluated based on the amount (30%), depth (30%) and novelty (10%) of your work and the clarify of the presentation and Q&A (30%). Please also submit your slides as <firstname>_<lastname>_FinalSlides.pdf for records.

How to Hand It In

Submit the requested documents via blackboard to the appropriate entry. You can make multiple attempts but only the last attempt will be graded.

When to Hand It In

All assignments are due at 11:59 PM on the date specified on the course calendar. **Late assignments will receive a 20% deduction of the full grade each day.**

Other Notes

Your final report and slides will be uploaded to the course website as examples for future students.