CS 415/515 Assignment 1 [100 points]

Instructions: The project is a group project. You can make a group of 3 people at the most. If you want you can do this project individually as well, but you will not get any extra credit for doing it individually.

As part of this project you will be implementing a paper in PyTorch framework. You can use google colab to implement the papers.

The list of papers will be shared with you in a Google Docs link https://docs.google.com/document/d/13RP_H9ETkoKC0xEX7Ya86mrPpAaUk2uBYaXVP7L2iUk/edit?usp=sharing. You can write the names of all the group members in the google doc provided so that everyone can see which papers have already been taken by other groups. Please note that no two groups can select the same paper for implementation. The group which selects the paper first will get the opportunity to implement that paper as it is a First-Come-First-Serve paper selection process. Please note the list contains more number pf papers than the possible number of groups.

Please remember you need to implement the papers which mean you are not using wrapper functions as you have done in the ipynb notebooks e.g. DecisionTreeClassifier. Rather as part of this project you are supposed to write your implementation of the paper. You are free help from the internet. **It is okay to use ChatGPT or any other AI tool for the purpose of learning. If you use ChatGPT or any other AI tool you must acknowledge the kind of use and you will have to list the ChatGPT or any other AI tool queries you wrote in the final report**.

The deliverable of this project are

1. the code you developed
2. a report containing the details i.e. what are the steps of implementing this project, what is the method, what are the hyperparameters e.g. batch size, learning rate, weight decay, the dataset that you used etc. **The report must NOT be generated via ChatGPT or any other AI tool.** The report must not exceed 5 pages.
3. plots showing the training and testing losses.
4. some output images from your model.
5. your leanings in this project.
6. challenges you faced in implementing this project.
7. demonstrating to me how the code runs and explaining what the code does (I am expecting a 5 to 10 minutes online/in-person demo)

Please note that submitting a project which you can not explain at all will get you a zero.

Paper Implementation : 60 marks
Report : 40 marks

I will strongly recommend starting to write the report from Day 1 to capture what you did throughout the entire duration of the project.

Please submit the project from any one of the group member's blackboard account.

Every group member will get the same total points awarded for the project (unless a situation demands otherwise).