CS 722 – Project Guide

The goal of this term project is to implement current state-of-the-art machine learning algorithms appropriately and practice writing a scientific report. Please carefully read the requirements of the report:

- Individual project
- Must use the IEEE template (Download at: https://lor.instructure.com/resources/9ed236915c7f4493abb28b95e1b89627?shared)
- Must implement at least two STATE-OF-THE-ART machine learning algorithms in your research field, which are not simple conventional machine learning nor deep learning models, such as SVM, neural networks, and logistic regression. Otherwise penalty will be given.
- For master students, if algorithms are too complex, can implement one only. However, in this case, should compare performance with conventional machine learning methods as many as possible.
- If public data is not available in your field, consider most similar dataset which is publicly available. Or find alternative dataset where your computational challenges may exist.

The project will be evaluated by:

1. Abstract (10 points)
    a. Whether abstract delivers sufficient information of the paper?
2. Introduction (20 points)
    a. Whether the motivation of the project is well described
    b. Whether computational challenges are well described
3. Related works (30 points)
    a. Must introduce the two papers with reference.
    b. Whether the related work are well described.
    c. Whether the related works' pros and cons are well described
4. Experiments (30 points)
    a. Figures and table should be included to show the experimental results
    b. Whether the dataset is well described
    c. How well the experimental settings are described
    d. How do you tune the optimal parameter?
    e. Whether appropriate evaluation strategies (e.g., k-fold cross validation) are used for the performance comparison
    f. How well the experimental results are described and discussed
    g. Whether figures are appropriately illustrated and readable
5. Conclusion (10 points)
    a. Well summarized as conclusion?
    b. Potential issues or limitation is stated?