

CS4210 Summer 2024 Project Assignment 3

Total points: 100

Due date: Monday, August 5, 2024 (**Hard Deadline**)

Purposes:

1. Develop neural networks using deep learning libraries
2. Apply deep learning models to solve real-world problems

Task Description:

Task 1 (70 pts): Please use the following link to participate in the mini-competition <https://www.kaggle.com/t/e4e8313e945e4af49f04e234e9d514ce>, where you're asked to build and train a deep neural network model for facial expression classification. The evaluation is based on Categorization Accuracy for ranking.

Please note that the amount of the points you receive will be based on your leaderboard score in the mini-competition (50 points if the Kaggle leaderboard score of your submission is greater than the baseline score 0.76696) and the quality of implementation (20 points). Below please find the following score-to-grade mapping.

<i>Leaderboard Score</i>	<i>Grade Points</i>
0.76696 or above	50
0.7 to 0.76696	40
0.6 to 0.7	30
0.5 to 0.6	20
below 0.5	0

Task 2 (30 pts): Please make a research-level poster to describe the model and the training settings (such as learning rate values and number of epochs) and discuss the results. If applicable, please describe the techniques that you used to improve the score of your model.

Please note that your poster may include some of the following sections:

- Title
- Student Name
- Abstract
- Introduction (statement of the problem and a brief literature review)
- Method (description of the method used)
- Results
- Conclusion (some your comments about the work)
- References (at most 3 highly related references)

- Acknowledgment (If you use any work implemented by others, please give full credit to the original source i.e., author, paper, publication)

Please google "research poster" to learn some decent research posters' layout and content. Some free poster templates are available at <https://www.posterpresentations.com/free-poster-templates.html>

What to Submit?

1. For Task 1:

- **Kaggle:** follow the submission file format and instructions to submit your predictions in Kaggle.
- **Canvas:**
 - Your **iPython notebook** that contains source codes (Note: the instructor will access to evaluate your codes)
 - **Final submission files** that you submitted to Kaggle.
 - A readme.txt file includes **your Kaggle username** and your **final Kaggle leaderboard score** on this assignment.
 - Please **zip them into a file (yourname_assignment3.zip)** and submit the zipped file in Canvas

2. For Task 2:

- **Canvas:**
 - Please post your poster, at https://canvas.cpp.edu/courses/100948/discussion_topics/871351 so that your peers could learn from your work.

Please be sure to submit the required documents as listed above. Otherwise, a grade of zero will be applied.