

COLAB:

<https://colab.research.google.com/drive/1XA-ilZcJkdl6l7yD9cbNUwTfQsAqk1U2#scrollTo=ptEYkJ35Q-Y2>

TASKLIST:

1. Implementation of the GNNFactory function [40 marks]
Write a brief description of your model.(2-3 sentences)
2. Implement early stopping functionality: with patience parameter 50 [10 marks]
Description: During training, track performance on validation set and stop training if validation set performance does not improve for X epochs (X=50)
You will be keeping track of the best validation model, which will be used for reporting test accuracy
The current train function trains args.epochs number of epochs.
Write your own train function (train_ES)
3. Reporting best test accuracy across hyperparameters: [30 marks]
Tune hyperparameters (num_layers, batch_size, hidden_dim, dropout, weight_decay, lr) to obtain best performance for ["GCN","SAGE","GAT"] and ["cora","citeseer"]:
 - a. Report the hyperparameters used for obtaining best performance in each of the 6 cases
 - b. plot the training loss and validation accuracy across epochs in all 6 cases
 - c. create a 3*2 table reporting the test accuracies
4. For the following, use the hyperparameters giving best performance. Change only one hyperparameter at a time, and observe impact of test accuracy [20 marks]
Take "cora", and for ["GCN","SAGE"]:
 - a. set num_layers to [1..10] and plot change in test accuracy.
 - b. set hidden_dim to [8,16,32,64,128,256] and plot change in test accuracy.

DELIVERABLES:

1. Make a copy of this colab and submit a notebook with your modifications.
Generate a separate plot in each cell. Ensure reproducibility of plots.
2. Summit a pdf with the descriptions. Write the description from (1), all tables and plots into the pdf
3. Submit a zip containing the 2 files names <RollNo>.zip