Machine Learning
CS456- 2019

Notes:

This Project to be solved in group of 3.

Problem 1

Given the dataset of Sign up 'Turkey Ankara Ayranci Anadolu High School's Sign Language Digits' , (https://github.com/ardamavi/Sign-Language-Digits-Dataset)you are asked to do the following:

- Split your data to 3 parts:
  - Training (60%),
  - validation (20%)
  - testing(20%)
- Train using normalized gray images
  - Do preprocessing steps (Normalization) as follows:
    - Convert each image to gray
    - Divide each image by 255
  - Build 4 different Neural Network architecture that can detect the digit of a given image(change number of hidden layer, number of neurons in each hidden layer).
  - Apply cross validation during training

- Train using normalized RGB image
  - Do preprocessing steps (Normalization) as follows:
    - calculate average for all images,
    - subtract this averages from each image.
    - Divide each image by 255
  - Build a 4 different architecture convolutional neural network model that can detect the digit of a given image.(change number of conv layer , pooling layers,...).
  - Apply cross validation during training

- Evaluate your models using different measurements (ie. recall, precision, fscore)
- Deliver a report that contains experiments you made, and the result of each experiment.

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Note: you can train your models on gooogle colab or kaggle kernel.