Deep Learning (CS F425)

Assignment – 2

Submission Time & Date: 1659hrs on 6th Dec 2021

Max Marks: 20

General Instructions:

This assignment is a coding project and is expected to be done in groups. Each group can contain at most four members. Make sure that all members in the group are registered to this course.

Refrain from directly copying codes/snippets from other groups or the internet as all codes will be put through a plagiarism check.

All deliverable items should be put together in a single .zip file. Rename this file as A2_<id-of-first-member>_<id-of-second-member>_<id-of-third-member>_<id-of-fourth-member> before submission.

Submit the zip file on CMS on or before the aforementioned deadline. Please note that this is a hard deadline and no extensions/exemptions will be given. The demos for this assignment will be held on a later date which shall be conveyed to you.

All group members are expected to be present during the demo.

Problem Statement:

- Convolutional neural networks have been incredibly successful in practical applications for image related tasks.
- We are going to revisit the multiclass classification problem on the Fashion MNIST dataset.
- Implement a CNN model taking reasonable design and architectural decisions.
- Train for at least 30 epochs.
- Write clean and modular code.
- Analyze and explain the performance of this model. Discuss the results and observations in the report.
- All design and architectural decisions must be included in the report. The report should present the model with plots for training loss, validation loss, training accuracy, validation accuracy, confusion matrix and a classification report.

Whom to contact for queries:

Please contact Mr. Pratyush Banerjee (f20180312@hyderabad.bits-pilani.ac.in) for any queries.

Link to dataset:

Fashion MNIST dataset can be downloaded from the following link:

https://www.kaggle.com/zalando-research/fashionmnist