Assignment 2
DSC 707 Deep Learning
Spring 2022

Objectives:

This assignment is aimed at designing and implementing a convolutional neural network to solve image classification problems. Students will also study the impact of various hyper-parameters on the evolution of classification performance.

Problem: Image Recognition using ConvNets

Design and implement a ConvNet to recognize objects in the **CIFAR-10 dataset** (same as Assignment#1). Carry out a comprehensive analysis of network performance by varying the hyper-parameters and size of training data. Specifically, number of layers, number of filters and size of filter are expected to be studied. Your report must contain the **architectural details** of the network you design (in tabular or visual form) as well as the **total number of parameters** in your network. Compare the performance (and other aspects) of the CNN with the performance you achieve with a conventional feed forward ANN (in Assignment#1). The submission must have all the key ingredients expected from a technical report including Abstract, Introduction (and some literature), Methods, Experiments/Results and Concluding Remarks.

Submission Requirements

Submit your assignment in the form of a technical report. The report must be formatted according to **IEEE two column conference paper template**[1]. Attach the source code of your implementation as an annexure to the report. You are free to seek help from any sources with proper citation/acknowledgment.

[1] https://www.ieee.org/conferences/publishing/templates.html

Submission Date

Submit the assignment as a single PDF file on LMS by **26th April 2022.**

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