**Deep Learning**

**Programming Assignment**

**This is a group assignment. A maximum of four members can be there in a group. You can have less number of members in a group or you can do it individually as well. Irrespective of the team size the scope and the marking standard of the submission won’t change.**

You may apply any **two** **Deep learning architectures** (under supervised, unsupervised, generative/semi-supervised or reinforcement learning) to solve any real-world problem based on any real-world dataset. You may use a dataset of your own or use a publicly available dataset from a source like the following one (you can choose any other data source. Be sure to cite where you got your data from.

The dataset has to be real-world data that is published on the internet. If you’re using your own data, make sure to upload to a cloud storage and share the link in the report.

**Note:** The models/architectures selected **MUST** be Deep learning architectures.

Example data sources:

<http://archive.ics.uci.edu/ml/index.php>

<https://www.kaggle.com/datasets>

Based on a dataset, you may apply **two deep learning models/architectures** (using python and Jupyter notebook) and then compare and contrast the test results to discuss which of the models perform better for the given problem.

Submission

* The dataset (or the link to the dataset if it’s too large to be uploaded), source code and the executable
* A **10-12** page pdf report with a description on the problem addressed, dataset used, methodology (algorithms/architectures used), results and discussion (including possible limitations/future work).
* The title page of the report should have the names, student ids and the contact emails of the members of the group.
* The entire submission bundle has to be uploaded to the courseweb link (which will be available close to the deadline) as a single zip file.
* Only one member needs to do the submission.

The report should have an appendix that contains all the source code (added as text, not screen-shots). If the source code is not added as text in the appendix, it won’t be accepted as a valid submission.

**The report is the main deliverable that will be marked.** However, the code should be submitted to validate what is mentioned in the report. **Both the report and the source code should be there to be accepted as a valid submission.**

All reports will be uploaded to Turnitin for plagiarism checking. If the turnitin similarity is above **30%**, **10%** of the marks will be reduced. For **50%** similarity, **50%** of the marks will be reduced. For reports with **80%** similarity, **no marks** will be given.

**Note:** If your submission size is larger than 10 MB, you may upload the submission to dropbox and share a dropbox link (please use dropbox only). If you are uploading the Dropbox link, make sure to include that in a text file (readme file) and indicate your name, registration number, contact number and contact email in the same text file.

**Marks allocated: 15**