Project Instructions

You may pick any project which appears in the project file, or any other project related to deep-learning. You may use third party libraries or code, but **you must write the neural network graph yourself and it must be written in TensorFlow 1.x only** (Keras, sk-learn, tflearn, pytorch etc. are not permitted, except in the final deliverable).

The project has 3 deliverables (**all deliverables must be in English. The documents (not the code) must be in pdf or word format** (i.e., not Jupyter notepad)):

1. Proposal: a paragraph describing your proposed work in English: due by 1/11/21 (5% of your final grade)
   Describe your dataset including the features and the label you will be predicting – is it a classification problem or a regression problem? Note that the features must be numbers. How will you split train and test? Make sure that you have obtained that dataset successfully (have downloaded it, etc.).

2. Neural network: The project implemented using a neural network (in Tensorflow 1.x). + A page describing your work in English (10% of your final grade) due by 29/11/21:
   This submission must include a description of your work + results + comparison to a simple linear or logistic regression (or softmax). Also describe your initial attempts, and how you have corrected them to improve your results (including loss, train error and validation error, overfitting, underfitting). + **screenshots** (of your console or plots) + code.
   Make sure to split the data into a train and test set (and validation set if required).

3. Final report + presentation using CNN / RNN / RL or anything more advanced (25% of your final grade): due on: 2-3/1/22

Final report: the final report must be at least 4 pages long (in English). Follow an academic paper structure, that is, write an abstract, introduction, related work and required background, project description, experiments/simulation results, and conclusions. Add a section for previous attempts, which will describe the work you have done in the deliverables 2 and 3. The project description section should include only your final (best) approach. Do not write your report as a story (try avoiding first person viewpoint and subjective case). Compare your results to what you have obtained using Linear or Logistic regression and MLP. You may **not** fabricated data in this report. Please include also your code in this submission. You will need to print your report and bring it with you to the presentation.

Presentation: you will be presenting your projects at our last class (6-7/1/19); you will be allotted 7 minutes, including Q&A and transition between speakers.

Important: all deliverables should be done through Moodle. You must include the IDs of all students in the file name (e.g. 432716755_328763423_341276324)! Please submit each project only once.

Good luck!