IFT 725 : Project
Individual work

Due date : December 18th (**at the latest**)

Your project will be evaluated almost exclusively from your report. It is therefore very important to describe in detail what you did. Use the same NIPS format as in the assignments. You should write your report similarly as you would write a scientific paper.

Specifically, you must convince me that (1) you understand the algorithm you have implemented and (2) that you have correctly implemented the algorithm in question. To achieve objective (1), you must give a precise and accurate description of your algorithm. To achieve objective (2), you must make a comparison with a simple baseline to show that you can get good results and generate any other result that would validate the implementation of your algorithm (e.g. a plot of the training error training as training progresses, to demonstrate that the error monotonically decreases).

Please also submit the code you used in your project. I will consult it if necessary.

Here is the evaluation grid that I will use for the evaluation :

- **[5 points]** Introduction and motivation :
  - Describe the problem or application that your project is concerned with.
  - Mention the method you have chosen and why it solves your problem or is a good choice for your application.
- **[15 points]** Detailed description of the method / algorithm
  - Describe in detail your method / algorithm implementation. Here are some things that you could discuss :
    - Description of the data.
    - Description and notation for the inputs.
    - Description and notation for the targets.
  - Write a description of the general principles behind your approach. Here are some things that you could discuss :
    - Type of learning (supervised / unsupervised, discriminative / generative).
    - Intuition behind the training objective your algorithm optimizes.
    - Intuition behind the architecture of the neural network.
  - Provide a detailed description of your algorithm which implements these principles. Your description should allow a person to reimplement your method from your description. Here are some things that you could discuss :
    - Objective optimized during training.
    - Optimization technique used.
    - Description of gradients.
    - Architecture of the neural network.
    - Training procedure (one phase of training or training in several phases).
    - Description of the use of the network to make a prediction on new data.
    - Description of hyper-parameters.

    - Pseudocodes of your algorithm.
- **[10 points]** Résults :
    - Describe your experimental protocol (proportions used to divide the data into training, validation and test sets, data preprocessing, etc.).
    - Describe your procedure for selecting hyper-parameters.
    - Present and analyze the results for different hyper-parameters on the validation and training sets.
    - Present any results that validate the correctness of your implementation.
    - Present the results of your algorithm on the test set and make a comparison with an alternative, simple baseline.

Please submit your report and your code using the turin command :

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turnin -c ift725 -p projet rapport.pdf code.zip
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Good luck !