

# Assignment 4: Deep Learning

Submission: Monday June 15th  
3 students per group

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Machine Learning - 2020-I  
Maestría en Ing. de Sistemas y Computación

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Download the dataset MM-IMDB from <http://lisi1.unal.edu.co/mmimdb/>. The dataset includes poster images from movies of different genres as well as the text of the corresponding synopses.

## 1. Movie poster classification

- (a) Train a deep learning model to predict the genre. Use transfer learning with and without fine tuning.
- (b) Evaluate and analyze the results. Use the same evaluation metrics reported in the original paper. Compare your results with the ones reported in the paper. Discuss the results.

## 2. Movie synopsis classification

- (a) Train a recurrent neural network over the movie synopsis texts to predict the movie genre.
- (b) Evaluate and analyze the results. Compare your results with the ones reported in the paper. Discuss the results.

## 3. Multimodal movie classification

- (a) Create a model that combines the models from the question 1 and 2 for multimodal movie classification. Clearly explain your approach. Include a diagram of your model. Train the model.
- (b) Evaluate and analyze the results. Compare the results with the ones of the two previous questions. Find a recent paper (2019-2020) that uses the same dataset. Compare your results against the results reported in the original and the new paper.

The assignment must be submitted as a Jupyter notebook through the following [Dropbox file request](#), before midnight of the deadline date. The file must be named as `ml-assign4-unalusername1-unalusername2-unalusername3.ipynb`, where `unalusername` is the user name assigned by the university (include the usernames of all the members of the group). In case you need to include supporting files in addition to the notebook, submit a zipped file containing all the files and the notebook. Make sure that the notebook renders correctly and is free of errors before submitting.