

**Submit Assignment** 







Lab Files



## Practice lab: Collaborative Filtering Recommender Systems

In this exercise, you will implement collaborative filtering to build a recommender system for movies.



- 1 Notation
- 2 Recommender Systems
- · 3 Movie ratings dataset
- 4 Collaborative filtering learning algorithm
  - 4.1 Collaborative filtering cost function
    - Exercise 1
- <u>5 Learning movie recommendations</u>
- 6 Recommendations
- 7 Congratulations!

NOTE: To prevent errors from the autograder, you are not allowed to edit or delete nongraded cells in this lab. Please also refrain from adding any new cells. Once you have passed this assignment and want to experiment with any of the non-graded code, you may follow the instructions at the bottom of this notebook.



## **Packages**

We will use the now familiar NumPy and Tensorflow Packages.

In [1]: import numpy as np import tensorflow as tf from tensorflow import keras from recsys\_utils import \*

## 1 - Notation

General Notation	Description	Python (if any)
r(i, j)	scalar; = 1 if user j rated movie i = 0 otherwise	
y(i, j)	scalar; = rating given by user j on movie i (if $r(i,j) = 1$ is defined)	
$\mathbf{w}^{(j)}$	vector; parameters for user j	
$b^{(j)}$	scalar; parameter for user j	