

Assignment 5: Social Recommendation

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Task 1. Table 1 contains users' ratings for 5 movies. Extend the code in the Python script (*matrix_factorization.py*) and implement the regularized matrix factorization algorithm to predict the missing ratings for recommendation.

	Forrest Gump	Intouchables	Fight Club	Lion King	Pulp Fiction
Michael	4	4	5	3	5
Paul	5	5	3	?	4
Ann	5	?	2	5	3
Julie	5	4	3	4	?
Pierre	4	3	?	3	5
Sophie	4	?	4	5	5

Table 1

Hints:

- Randomly initialize latent user and item feature matrices U and V .
- Compute the partial derivative w.r.t. U and V (see slide 32 of the presentation). Don't forget about the regularization terms.
- Update U and V .
- Compute the mean squared error with regularization.
- If the error is smaller than 0.4, then stop the script.
- Return the matrix with predicted ratings.

Assignment delivery notes:

- This assignment should be uploaded to ILIAS by 10.04.2019
- Task 1 should be uploaded in *py* format.