

Problem 5 (10 pts.)

When answering a numerical value, enter only the numerical value in the answer box. No unit required. If it says "up to N decimal places", please answer by rounding off the N+1 decimal places.

1.

Suppose that there is data that 3 users each rated 5 movies. When a correlation matrix between users is created using this data, the correlation matrix becomes an N-th order square matrix. If a correlation matrix between movies is created, the correlation matrix becomes an M-order square matrix. Answer the integers that apply to N and M, respectively.

N (integer)

M (integer)

2.

In dm-end1-5.csv, the correlation matrix of 10 movies A to J is recorded. Using this data and `predict_scores()` and `get_recomm_by_item_sim()` defined in dm-end1-5.ipynb, execute item-based recommendations under the following conditions. Keep `min_common_items=3`.

Using the correlation coefficients as item similarity, recommend movies for a person who gave 5 points to A, 3 points to B, and 1 point to C. Answer the name of the movie with the highest score and its predicted score up to the second decimal place.

The name of the movie

Predicted score (up to the second decimal place)

Using (correlation coefficients +1)/2 as item similarity, recommend movies for a person who gave 1 point to D, 3 points to E, and 5 points to F. Answer the name of the movie with the highest score and its predicted score up to the second decimal place.

The name of the movie

Predicted score (up to the second decimal place)

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