5. Collaborative Filtering with Matrix Factorization

Exercises due Mar 8, 2023 08:59 -03 Completed

Collaborative Filtering with Matrix Factorization

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Matrix Factorization Practice

1/1 point (graded)
We now use **collaborative filtering** to solve the movie recommender system problem.

As we saw in the previous problem, we ended up with an unsatisfactory and trivial solu
the objective alone:

$$J(X) = \sum_{a,i \in D} \frac{(Y_{ai} - X_{ai})^2}{2} + \frac{\lambda}{2} \sum_{(a,i)} X_{ai}^2.$$

In the collaborative filtering approach, we impose an additional constraint on X:

then what is the minimum possible ?

1 ✔

Submit You have used 1 of 3 attempts

Intuition on the Vector Factors

1/1 point (graded)

Assume we have a 3 by 2 matrix i.e. we have 3 users and 2 movies. Also, is given

for some matrix and matrix .

Now which of the following is true about and ? (Choose all those apply.)

- [x] The first row of represents information on user 1's rating tendency
- [ ] The first row of represents information on movie 1
- [ ] The fir‹ Previous e Next ›
- [x] The first column of represents information on movie 1

If U has two or more columns, what do they generally represent? Two or more entries in a category, such as

A typo!

The rank of X is at most d. (not "at least", as was written above)

Just to double check in the lecture, it put [1,2,3] as V? Should it be V transpose instead?

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