

Matrix Factorization Quiz

测验, 4 个问题

1

point

1.

What is the basic intuition behind matrix factorization dimensionality reduction algorithms?

- ☐ That content-based and collaborative filtering are really just two different factorizations of the same ratings matrix.
 - ☐ That factoring user and item matrices can partition the users and items into clusters that can be treated identically, reducing the complexity of making recommendations.
 - ☐ The user-user and item-item correlations are more efficiently computed by factoring matrices.
 - ☒ That user-item relationships can be well-described in a lower-dimensional space (latent taste space) that can be computed from the ratings matrix.
-

1

point

2.

Most values of the user-item rating matrix are unknown, but traditional SVD-solving algorithms need a complete matrix. Three of the following answers are reasonable ways to fill the matrix. Which is **not** a good way to satisfy this requirement in a situation where the user ratings are on a 1 to 5 scale?

- ☐ Use the user's mean rating.
- ☒ Set all the missing values to 5, the maximum value.

Matrix Factorization Quiz

测验, 4 个问题

☐ Use the item's mean rating.

☐ Normalize the ratings and set missing values to 0.

1
point

3.

What do we mean by "folding in" when referring to SVD or Gradient Descent algorithms?

- ☒ Folding in refers to using the existing factorization/dimensionalization for new data (e.g., it is a way to add new movies or items with minimal computation).
 - ☐ Folding in refers to the process of making the matrix into a diagonal (essentially a vector of singular values).
 - ☐ Folding in refers to the process of computing a prediction as a dot product between the vector-space representations of a user and of an item.
 - ☐ Folding in is a matrix computation shortcut where we reduce the rank of the matrix first by removing all values close to zero.
-

1
point

4.

Probabilistic LSA breaks the process of predicting the probability that a user u will like/buy an item i into what two steps?

- ☐ First computing the usual prediction of how much the user will like/consume the item (the vector dot product of the user and item vectors), and then computing a "personalization factor" of how much the user is likely to make a personal selection vs. just taking the most popular choices. The resulting probability is a weighted

Matrix Factorization Quiz

测验, 4 个问题

average of the personalized prediction and non-personalized popularity score, weighted by the personalization factor.

- ☐ Predicting the probability that a user will select any item at all, and then the probability that the user will pick each particular item, if any item is picked. These two are multiplied to produce the resulting probability.
- ☒ Predicting the user-specific probability that the user will like/select each feature z , and then the probability that item i would be selected if feature z is selected. The products of these are summed across all features.



我（**伟臣 沈**）了解提交不是我自己完成的作业 将永远不会通过此课程或导致我的 Coursera 帐号被关闭。
了解荣誉准则的更多信息

提交测试

