Collaborative Filtering Assessment Solutions

189 Project T

1. Which are the 2 main paradigms of Recommendation Systems?
    a. Memory & Model
    b. SVD & SVD++
    c. Content-Based & Collaborative Filtering
    d. User-User & Item-Item

2. Which is more closely associated with traditional machine learning?
    a. Content-Based
    b. Collaborative Filtering

3. What is the primary algorithm for the Memory approach?
    a. K-means
    b. PCA
    c. K-nearest neighbors
    d. Logistic Regression

4. Which of the Memory methods is most widely used in practice?
    a. User-User, because it is simpler.
    b. Item-Item, because it is faster.
    c. User-User, because it is more personalized.
    d. Item-Item, because it is more stable.

5. What is the cold-start problem?
    a. The SVD method is highly sensitive to initial conditions
    b. The fact that all collaborative filtering methods suffer when new users/new items are added as there is no data to compare with.
    c. The fact the K-NN algorithm runs too slowly for large amounts of data
    d. There is no cold start problem.

6. What conditions would cause the SVD model to underfit?
    a. Bad initial conditions to start with
    b. Low latent dimension space (short embeddings)
    c. Too many parameters in the model
    d. Learning rate is too small

7. Which of these is not a parameter in the (biased) baseline SVD algorithm?
    a. User biases
    b. Item biases
    c. Item embeddings
    d. Global average

8. How can the SVD algorithm be sped up?
    a. **Stochastic Gradient Descent and Batch Updates**
    b. Approximating the update step
    c. Random restarts
    d. Lowering the learning rate

9. Why is the SVD algorithm called the SVD algorithm?
    a. Those were the initials of the makers.
    b. **The algorithm converges to SVD when all values are known.**
    c. It calculates the SVD of the estimated matrix at every step.
    d. Because U and T are singular vectors of the Interaction Matrix

10. Which of these are not valid similarity measures?
    a. Cosine similarity
    b. Euclidean distance
    c. Correlation
    d. **Number of entries in common**