Your grade: 92%

Your latest: **92%** • Your highest: **92%**
To pass you need at least 80%. We keep your highest score.

Next item →

1. What are some common encoding and preprocessing steps required for building a movie recommendation system? 0.8 / 1 point

- [x] One-hot encoding categorical variables
  - Correct
  - Correct! One-hot encoding is commonly used to convert categorical variables into numerical format.
- [x] Normalizing ratings
  - Correct
  - Correct! Normalizing ratings helps in standardizing the data values.
- [x] Applying collaborative filtering
  - This should not be selected
  - Incorrect. Collaborative filtering is a recommender system algorithm, not a preprocessing step.
- [ ] Removing stop words
- [x] Creating embedding layers
  - Correct
  - Correct! Embedding layers are used to convert high-dimensional categorical data into a lower-dimensional space.

2. In the context of recommender systems, what is the primary purpose of using Matrix Factorization? 1 / 1 point

- (•) To decompose the user-item interaction matrix into lower-dimensional matrices
- ( ) To compute the precision at K and recall at K metrics
- ( ) To preprocess movie ratings before training a recommender system
- ( ) To encode categorical variables into numerical values

Correct
Correct! Matrix Factorization decomposes the user-item interaction matrix to discover latent features.

3. Which of the following are valid applications of autoencoders? 0.8 / 1 point

- [x] Denoising images
  - Correct
  - Correct! Autoencoders can be used to remove noise from images.
- [x] Dimensionality reduction
  - Correct
  - Correct! Autoencoders are commonly used to reduce the dimensionality of data.
- [ ] Sorting large datasets
- [x] Data compression
  - Correct
  - Correct! Autoencoders can compress data by reducing its dimensions.
- [x] Generating synthetic data
  - This should not be selected
  - Incorrect. While other neural networks like GANs are used for generating synthetic data, autoencoders are not typically used for this purpose.

4. What is the main role of the generator in a Generative Adversarial Network (GAN)? 1 / 1 point

- (•) To create fake data that is indistinguishable from real data
- ( ) To classify data as real or fake
- ( ) To optimize the loss function of the GAN
- ( ) To preprocess the input data before training

Correct
Correct! The generator's main role is to create fake data that is as close as possible to the real data, fooling the discriminator.

5. In the context of a GAN, what is mode collapse? 1 / 1 point

- (•) When the generator produces limited diversity in output
- ( ) When the discriminator fails to distinguish between real and fake data
- ( ) When the training process becomes unstable and diverges
- ( ) When the input data is not properly preprocessed

Correct
Correct! Mode collapse occurs when the generator produces outputs that lack diversity, focusing on a limited set of outcomes.