

RECOMMENDATION SYSTEM – 1

MODEL 1 -- COLLABORATIVE MODEL

OUTPUT:

WARNING:tensorflow:vocab_size is deprecated, please use vocabulary_size.
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Epoch 1/3
25/25 [=====] - 18s 667ms/step -
factorized_top_k/top_1_categorical_accuracy: 7.0000e-05 - factorized_top_k/top_5_categorical_accuracy: 0.0015 - factorized_top_k/top_10_categorical_accuracy: 0.0047 -
factorized_top_k/top_50_categorical_accuracy: 0.0431 - factorized_top_k/top_100_categorical_accuracy: 0.0977 - loss: 33096.4720 - regularization_loss: 0.0000e+00 - total_loss: 33096.4720

Epoch 2/3
25/25 [=====] - 15s 604ms/step -
factorized_top_k/top_1_categorical_accuracy: 1.6000e-04 - factorized_top_k/top_5_categorical_accuracy: 0.0051 - factorized_top_k/top_10_categorical_accuracy: 0.0138 -
factorized_top_k/top_50_categorical_accuracy: 0.1046 - factorized_top_k/top_100_categorical_accuracy: 0.2094 - loss: 31007.5086 - regularization_loss: 0.0000e+00 - total_loss: 31007.5086

Epoch 3/3
25/25 [=====] - 15s 603ms/step -
factorized_top_k/top_1_categorical_accuracy: 4.2000e-04 - factorized_top_k/top_5_categorical_accuracy: 0.0079 - factorized_top_k/top_10_categorical_accuracy: 0.0216 -
factorized_top_k/top_50_categorical_accuracy: 0.1426 - factorized_top_k/top_100_categorical_accuracy: 0.2671 - loss: 30417.1460 - regularization_loss: 0.0000e+00 - total_loss: 30417.1460

Top 3 recommendations for user 42: [b'Rent-a-Kid (1995)'
b'Land Before Time III: The Time of the Great Giving (1995) (V)'
b'Aristocats, The (1970)']

RECOMMENDATION SYSTEM – 2

Model 1: Collaborative Filtering using Matrix Factorization

OUTPUT:

WARNING:tensorflow:vocab_size is deprecated, please use vocabulary_size.
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Epoch 1/3
25/25 [=====] - 4s 143ms/step - loss: 2.4793 - regularization_loss: 0.0000e+00 - total_loss: 2.4793

Epoch 2/3
25/25 [=====] - 1s 56ms/step - loss: 1.1939 - regularization_loss: 0.0000e+00 - total_loss: 1.1939

Epoch 3/3

25/25 [=====] - 1s 58ms/step - loss: 1.0737 - regularization_loss:
0.0000e+00 - total_loss: 1.0737
Top 3 recommendations for user 42: [b'Basquiat (1996)' b'Touch of Evil (1958)'
b'Great Day in Harlem, A (1994)']

RECOMMENDATION SYSTEM – 3

Model 2: Hybrid Model (Collaborative Filtering + Content-Based Filtering)

OUTPUT:

WARNING:tensorflow:vocab_size is deprecated, please use vocabulary_size.
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Epoch 1/3
25/25 [=====] - 4s 113ms/step - loss: 2.4940 - regularization_loss:
0.0000e+00 - total_loss: 2.4940
Epoch 2/3
25/25 [=====] - 1s 54ms/step - loss: 1.2140 - regularization_loss:
0.0000e+00 - total_loss: 1.2140
Epoch 3/3
25/25 [=====] - 1s 51ms/step - loss: 1.1106 - regularization_loss:
0.0000e+00 - total_loss: 1.1106
Top 3 recommendations for user 42: [b'Citizen Kane (1941)' b'Four Days in September (1997)'
b'Bonheur, Le (1965)']