Epoch 1/50

WARNING:tensorflow:Gradients do not exist for variables ['gcn\_trans\_h\_model\_\_sigmoid\_loss/entity\_embedding\_hyperplane\_space/embeddings:0'] when minimizing the loss. If you're using `model.compile()`, did you forget to provide a `loss` argument?

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WARNING:tensorflow:Gradients do not exist for variables ['gcn\_trans\_h\_model\_\_sigmoid\_loss/entity\_embedding\_hyperplane\_space/embeddings:0'] when minimizing the loss. If you're using `model.compile()`, did you forget to provide a `loss` argument?

1682/1682 [==============================] - ETA: 0s - loss: 934.6862 - accuracy: 0.64952024-03-17 03:11:21.360247: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-03-17 03:12:42.560211: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-03-17 03:12:56.604745: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

2024-03-17 03:12:57.534299: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 1534s 909ms/step - loss: 934.6862 - accuracy: 0.6495 - val\_loss: 730.3324 - val\_accuracy: 0.6972 - lr: 1.0000e-04

Epoch 2/50

1682/1682 [==============================] - ETA: 0s - loss: 610.8286 - accuracy: 0.72772024-03-17 03:37:24.307354: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

1682/1682 [==============================] - 1548s 920ms/step - loss: 610.8286 - accuracy: 0.7277 - val\_loss: 611.5128 - val\_accuracy: 0.7254 - lr: 1.0000e-04

Epoch 3/50

1682/1682 [==============================] - 1530s 909ms/step - loss: 356.8091 - accuracy: 0.8104 - val\_loss: 655.6155 - val\_accuracy: 0.7160 - lr: 1.0000e-04

Epoch 4/50

1682/1682 [==============================] - 1447s 860ms/step - loss: 165.7875 - accuracy: 0.8861 - val\_loss: 709.9198 - val\_accuracy: 0.7124 - lr: 1.0000e-04

Epoch 5/50

1682/1682 [==============================] - 1424s 845ms/step - loss: 71.1004 - accuracy: 0.9398 - val\_loss: 811.7411 - val\_accuracy: 0.7079 - lr: 1.0000e-04

Epoch 6/50

1682/1682 [==============================] - 1457s 865ms/step - loss: 34.1302 - accuracy: 0.9653 - val\_loss: 915.2161 - val\_accuracy: 0.6977 - lr: 1.0000e-04

Epoch 7/50

1682/1682 [==============================] - ETA: 0s - loss: 19.5428 - accuracy: 0.9749

Epoch 7: ReduceLROnPlateau reducing learning rate to 5.999999848427251e-05.

1682/1682 [==============================] - 1441s 855ms/step - loss: 19.5428 - accuracy: 0.9749 - val\_loss: 923.2358 - val\_accuracy: 0.7061 - lr: 1.0000e-04

2883/2883 [==============================] - 40s 14ms/step

Evaluation Metrics:

Precision: 0.6672

Recall: 0.8937

F1 Score: 0.7640

ROC AUC: 0.8373

PR AUC: 0.8550

MCC: 0.4763

In [3]: y\_pred = (test\_scores > 0.6).astype(int)

...: y\_true = y\_test.astype(int)

...:

...: # Calculate evaluation metrics

...: precision = precision\_score(y\_true, y\_pred)

...: recall = recall\_score(y\_true, y\_pred)

...: f1 = f1\_score(y\_true, y\_pred)

...: roc\_auc = roc\_auc\_score(y\_true, test\_scores)

...: pr\_auc = average\_precision\_score(y\_true, test\_scores)

...: mcc = matthews\_corrcoef(y\_true, y\_pred)

...:

...: # Confusion Matrix

...: conf\_matrix = confusion\_matrix(y\_true, y\_pred)

...:

...: # Display evaluation metrics

...: print("\nEvaluation Metrics:")

...: print(f'Precision: {precision:.4f}')

...: print(f'Recall: {recall:.4f}')

...: print(f'F1 Score: {f1:.4f}')

...: print(f'ROC AUC: {roc\_auc:.4f}')

...: print(f'PR AUC: {pr\_auc:.4f}')

...: print(f'MCC: {mcc:.4f}')

Evaluation Metrics:

Precision: 0.9315

Recall: 0.4846

F1 Score: 0.6375

ROC AUC: 0.8373

PR AUC: 0.8550

MCC: 0.5117

In [4]: y\_pred = (test\_scores > 0.7).astype(int)

...: y\_true = y\_test.astype(int)

...:

...: # Calculate evaluation metrics

...: precision = precision\_score(y\_true, y\_pred)

...: recall = recall\_score(y\_true, y\_pred)

...: f1 = f1\_score(y\_true, y\_pred)

...: roc\_auc = roc\_auc\_score(y\_true, test\_scores)

...: pr\_auc = average\_precision\_score(y\_true, test\_scores)

...: mcc = matthews\_corrcoef(y\_true, y\_pred)

...:

...: # Confusion Matrix

...: conf\_matrix = confusion\_matrix(y\_true, y\_pred)

...:

...: # Display evaluation metrics

...: print("\nEvaluation Metrics:")

...: print(f'Precision: {precision:.4f}')

...: print(f'Recall: {recall:.4f}')

...: print(f'F1 Score: {f1:.4f}')

...: print(f'ROC AUC: {roc\_auc:.4f}')

...: print(f'PR AUC: {pr\_auc:.4f}')

...: print(f'MCC: {mcc:.4f}')

Evaluation Metrics:

Precision: 0.9922

Recall: 0.3857

F1 Score: 0.5554

ROC AUC: 0.8373

PR AUC: 0.8550

MCC: 0.4835

Εικόνα που περιέχει κείμενο, διάγραμμα, γράφημα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει γράφημα, διάγραμμα, κείμενο, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, ορθογώνιο παραλληλόγραμμο

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