Epoch 1/50

1682/1682 [==============================] - ETA: 0s - loss: 953.8315 - accuracy: 0.64092024-03-16 22:32:03.086281: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-03-16 22:33:30.313905: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

2024-03-16 22:33:31.241797: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 1491s 885ms/step - loss: 953.8315 - accuracy: 0.6409 - val\_loss: 775.1664 - val\_accuracy: 0.6799 - lr: 1.0000e-04

Epoch 2/50

1682/1682 [==============================] - ETA: 0s - loss: 698.0922 - accuracy: 0.70212024-03-16 22:55:44.017471: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-03-16 22:55:56.214869: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 1346s 800ms/step - loss: 698.0922 - accuracy: 0.7021 - val\_loss: 664.7396 - val\_accuracy: 0.7105 - lr: 1.0000e-04

Epoch 3/50

1682/1682 [==============================] - 1428s 849ms/step - loss: 492.2699 - accuracy: 0.7631 - val\_loss: 658.0154 - val\_accuracy: 0.7142 - lr: 1.0000e-04

Epoch 4/50

1682/1682 [==============================] - 1527s 908ms/step - loss: 339.3734 - accuracy: 0.8142 - val\_loss: 725.3011 - val\_accuracy: 0.7019 - lr: 1.0000e-04

Epoch 5/50

1682/1682 [==============================] - 1434s 853ms/step - loss: 241.6191 - accuracy: 0.8460 - val\_loss: 787.1832 - val\_accuracy: 0.7033 - lr: 1.0000e-04

Epoch 6/50

1682/1682 [==============================] - 1388s 825ms/step - loss: 174.4006 - accuracy: 0.8683 - val\_loss: 908.5189 - val\_accuracy: 0.6945 - lr: 1.0000e-04

Epoch 7/50

1682/1682 [==============================] - 1340s 797ms/step - loss: 125.2362 - accuracy: 0.8912 - val\_loss: 959.4899 - val\_accuracy: 0.6963 - lr: 1.0000e-04

Epoch 8/50

1682/1682 [==============================] - ETA: 0s - loss: 88.9140 - accuracy: 0.9115

Epoch 8: ReduceLROnPlateau reducing learning rate to 5.999999848427251e-05.

1682/1682 [==============================] - 1459s 867ms/step - loss: 88.9140 - accuracy: 0.9115 - val\_loss: 1053.2924 - val\_accuracy: 0.6904 - lr: 1.0000e-04

2883/2883 [==============================] - 45s 15ms/step

Evaluation Metrics:

Precision: 0.6643

Recall: 0.8601

F1 Score: 0.7496

ROC AUC: 0.8265

PR AUC: 0.8456

MCC: 0.4452

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: 0.8539

Recall: 0.5100

F1 Score: 0.6386

ROC AUC: 0.8265

PR AUC: 0.8456

MCC: 0.4619

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: 0.9811

Recall: 0.3999

F1 Score: 0.5682

ROC AUC: 0.8265

PR AUC: 0.8456

MCC: 0.4868

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

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει διάγραμμα, κείμενο, γράφημα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, γραμμή, γράφημα, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, σχεδίαση

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, γράφημα, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα