Epoch 1/50

1682/1682 [==============================] - ETA: 0s - loss: 942.9639 - accuracy: 0.63722024-03-18 18:45:28.891817: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-03-18 18:46:03.519006: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

2024-03-18 18:46:04.705023: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 1497s 887ms/step - loss: 942.9639 - accuracy: 0.6372 - val\_loss: 733.7535 - val\_accuracy: 0.6918 - lr: 1.0000e-04

Epoch 2/50

1682/1682 [==============================] - ETA: 0s - loss: 636.1942 - accuracy: 0.71622024-03-18 19:08:45.303719: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-03-18 19:09:09.744702: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 1386s 823ms/step - loss: 636.1942 - accuracy: 0.7162 - val\_loss: 632.5279 - val\_accuracy: 0.7087 - lr: 1.0000e-04

Epoch 3/50

1682/1682 [==============================] - 1374s 816ms/step - loss: 457.8737 - accuracy: 0.7689 - val\_loss: 637.8161 - val\_accuracy: 0.7152 - lr: 1.0000e-04

Epoch 4/50

1682/1682 [==============================] - 1367s 812ms/step - loss: 313.6539 - accuracy: 0.8231 - val\_loss: 719.2670 - val\_accuracy: 0.7011 - lr: 1.0000e-04

Epoch 5/50

1682/1682 [==============================] - 1362s 809ms/step - loss: 218.2275 - accuracy: 0.8555 - val\_loss: 790.2597 - val\_accuracy: 0.7006 - lr: 1.0000e-04

Epoch 6/50

1682/1682 [==============================] - 1367s 812ms/step - loss: 151.5061 - accuracy: 0.8747 - val\_loss: 893.9711 - val\_accuracy: 0.7004 - lr: 1.0000e-04

Epoch 7/50

1682/1682 [==============================] - ETA: 0s - loss: 101.2859 - accuracy: 0.8943

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

1682/1682 [==============================] - 1358s 807ms/step - loss: 101.2859 - accuracy: 0.8943 - val\_loss: 981.7203 - val\_accuracy: 0.6952 - lr: 1.0000e-04

2883/2883 [==============================] - 48s 16ms/step

Evaluation Metrics:

Precision: 0.6500

Recall: 0.9171

F1 Score: 0.7608

ROC AUC: 0.8279

PR AUC: 0.8469

MCC: 0.4643

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: 0.9256

Recall: 0.4690

F1 Score: 0.6226

ROC AUC: 0.8279

PR AUC: 0.8469

MCC: 0.4958

In [6]: 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: 0.9948

Recall: 0.3453

F1 Score: 0.5127

ROC AUC: 0.8279

PR AUC: 0.8469

MCC: 0.4535

Εικόνα που περιέχει κείμενο, διάγραμμα, γράφημα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει διάγραμμα, γράφημα, κείμενο, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, σχεδίαση

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