Epoch 1/30

1682/1682 [==============================] - ETA: 0s - loss: 17.2358 - accuracy: 0.51982024-04-18 13:55:09.350923: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 10509312000 exceeds 10% of free system memory.

2024-04-18 13:55:21.492261: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 865s 512ms/step - loss: 17.2358 - accuracy: 0.5198 - val\_loss: 11.1669 - val\_accuracy: 0.5580 - lr: 1.0000e-05

Epoch 2/30

1682/1682 [==============================] - ETA: 0s - loss: 7.3621 - accuracy: 0.61192024-04-18 14:10:14.716124: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 10509312000 exceeds 10% of free system memory.

2024-04-18 14:10:20.501167: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 899s 535ms/step - loss: 7.3621 - accuracy: 0.6119 - val\_loss: 4.4601 - val\_accuracy: 0.6512 - lr: 1.0000e-05

Epoch 3/30

1682/1682 [==============================] - ETA: 0s - loss: 2.8829 - accuracy: 0.67982024-04-18 14:24:40.774364: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 10509312000 exceeds 10% of free system memory.

1682/1682 [==============================] - 865s 514ms/step - loss: 2.8829 - accuracy: 0.6798 - val\_loss: 1.7673 - val\_accuracy: 0.6640 - lr: 1.0000e-05

Epoch 4/30

1682/1682 [==============================] - 825s 491ms/step - loss: 1.1947 - accuracy: 0.7237 - val\_loss: 0.8813 - val\_accuracy: 0.6760 - lr: 1.0000e-05

Epoch 5/30

1682/1682 [==============================] - 828s 492ms/step - loss: 0.6481 - accuracy: 0.7613 - val\_loss: 0.6325 - val\_accuracy: 0.6837 - lr: 1.0000e-05

Epoch 6/30

1682/1682 [==============================] - 842s 500ms/step - loss: 0.4665 - accuracy: 0.7959 - val\_loss: 0.6044 - val\_accuracy: 0.6824 - lr: 1.0000e-05

Epoch 7/30

1682/1682 [==============================] - 836s 497ms/step - loss: 0.3891 - accuracy: 0.8276 - val\_loss: 0.6183 - val\_accuracy: 0.6884 - lr: 1.0000e-05

Epoch 8/30

1682/1682 [==============================] - 849s 505ms/step - loss: 0.3384 - accuracy: 0.8549 - val\_loss: 0.6326 - val\_accuracy: 0.6915 - lr: 1.0000e-05

Epoch 9/30

1682/1682 [==============================] - 904s 537ms/step - loss: 0.2953 - accuracy: 0.8793 - val\_loss: 0.6627 - val\_accuracy: 0.6955 - lr: 1.0000e-05

Epoch 10/30

1682/1682 [==============================] - 898s 534ms/step - loss: 0.2560 - accuracy: 0.8996 - val\_loss: 0.7118 - val\_accuracy: 0.6959 - lr: 1.0000e-05

Epoch 11/30

1682/1682 [==============================] - ETA: 0s - loss: 0.2206 - accuracy: 0.9179

Epoch 11: ReduceLROnPlateau reducing learning rate to 5.999999848427251e-06.

1682/1682 [==============================] - 835s 496ms/step - loss: 0.2206 - accuracy: 0.9179 - val\_loss: 0.7720 - val\_accuracy: 0.6941 - lr: 1.0000e-05

2883/2883 [==============================] - 34s 12ms/step

Evaluation Metrics:

Precision: 0.6342

Recall: 0.8619

F1 Score: 0.7307

ROC AUC: 0.8100

PR AUC: 0.8365

MCC: 0.3910

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: 0.6579

Recall: 0.7889

F1 Score: 0.7175

ROC AUC: 0.8100

PR AUC: 0.8365

MCC: 0.3865

In [5]: 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: 0.7020

Recall: 0.6908

F1 Score: 0.6964

ROC AUC: 0.8100

PR AUC: 0.8365

MCC: 0.3977

Εικόνα που περιέχει διάγραμμα, γραμμή, γράφημα, κείμενο

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, γράφημα, διάγραμμα, γραμμή

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