Epoch 1/15

1682/1682 [==============================] - 1574s 930ms/step - loss: 5.2661 - accuracy: 0.5936 - val\_loss: 1.2302 - val\_accuracy: 0.6450 - lr: 5.0000e-05

Epoch 2/15

1682/1682 [==============================] - 1508s 897ms/step - loss: 0.7350 - accuracy: 0.7116 - val\_loss: 0.6367 - val\_accuracy: 0.6541 - lr: 5.0000e-05

Epoch 3/15

1682/1682 [==============================] - 1565s 930ms/step - loss: 0.2968 - accuracy: 0.9098 - val\_loss: 0.8480 - val\_accuracy: 0.6493 - lr: 5.0000e-05

Epoch 4/15

1682/1682 [==============================] - 1551s 922ms/step - loss: 0.1060 - accuracy: 0.9834 - val\_loss: 1.2991 - val\_accuracy: 0.6523 - lr: 5.0000e-05

Epoch 5/15

1682/1682 [==============================] - 1525s 906ms/step - loss: 0.0602 - accuracy: 0.9959 - val\_loss: 1.5338 - val\_accuracy: 0.6495 - lr: 2.5000e-05

2883/2883 [==============================] - 12s 4ms/step

Evaluation Metrics:

Precision: 0.6675

Recall: 0.5880

F1 Score: 0.6252

ROC AUC: 0.7003

PR AUC: 0.7523

MCC: 0.2972

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)

...:

...: # 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: 0.6794

Recall: 0.5729

F1 Score: 0.6216

ROC AUC: 0.7003

PR AUC: 0.7523

MCC: 0.3063

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)

...:

...: # 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: 0.6927

Recall: 0.5577

F1 Score: 0.6179

ROC AUC: 0.7003

PR AUC: 0.7523

MCC: 0.3164

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, γράφημα, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, οθόνη, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, πολυχρωμία, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει γράφημα, κείμενο, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

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

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, γραμμή, γράφημα, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Triplet 1 (Original):

Subject: https://ec.europa.eu/eurostat/NLP4StatRef/knowledge/paragraph9574\_3455, Predicate: http://www.w3.org/1999/02/22-rdf-syntax-ns#type, Object: https://ec.europa.eu/eurostat/NLP4StatRef/ontology/Paragraph

157/157 [==============================] - 0s 2ms/step

Intercept 0.19497337181561725

Prediction\_local [0.40950666]

Right: 0.016325029

Feature Importances (Coefficients):

Predicate: 0.24386462431024544

Object: -0.0540019052256735

Subject: 0.024670565593458697

Triplet 2 (Original):

Subject: https://ec.europa.eu/eurostat/NLP4StatRef/knowledge/hlth\_ehis\_aw1u, Predicate: https://ec.europa.eu/eurostat/NLP4StatRef/ontology/term, Object: hlth\_ehis\_aw1u

157/157 [==============================] - 0s 2ms/step

Intercept 0.2339411437243305

Prediction\_local [0.48914163]

Right: 0.0013571642

Feature Importances (Coefficients):

Object: 0.2504824741683286

Predicate: 0.04157401298425325

Subject: -0.03685599646238602

Triplet 3 (Original):

Subject: https://ec.europa.eu/eurostat/NLP4StatRef/ontology/ei\_qna, Predicate: http://www.w3.org/1999/02/22-rdf-syntax-ns#type, Object: https://ec.europa.eu/eurostat/NLP4StatRef/ontology/StatisticalData

157/157 [==============================] - 0s 2ms/step

Intercept 0.22803930450782262

Prediction\_local [0.33950487]

Right: 0.7190377

Feature Importances (Coefficients):

Predicate: 0.1888536387716956

Subject: -0.05087860729718212

Object: -0.02650946293661914

Triplet 4 (Original):

Subject: https://ec.europa.eu/eurostat/NLP4StatRef/knowledge/glossaryArticle118, Predicate: https://ec.europa.eu/eurostat/NLP4StatRef/ontology/hasReference, Object: https://ec.europa.eu/eurostat/NLP4StatRef/knowledge/referenceSource59

157/157 [==============================] - 0s 2ms/step

Intercept 0.4067645254213861

Prediction\_local [0.11003406]

Right: 0.0059774853

Feature Importances (Coefficients):

Predicate: -0.22658647098672538

Object: -0.08851590200299718

Subject: 0.018371904617612587

Triplet 5 (Original):

Subject: https://ec.europa.eu/eurostat/NLP4StatRef/ontology/fats\_08, Predicate: https://ec.europa.eu/eurostat/NLP4StatRef/ontology/level, Object: 4

157/157 [==============================] - 0s 2ms/step

Intercept 0.4070832439368225

Prediction\_local [-0.00594101]

Right: 0.021286268

Feature Importances (Coefficients):

Predicate: -0.2191149013531636

Object: -0.1428945357683624

Subject: -0.051014821589400045