Epoch 1/15

1682/1682 [==============================] - 1916s 1s/step - loss: 4.4587 - accuracy: 0.5000 - val\_loss: 2.6163 - val\_accuracy: 0.5000 - lr: 5.0000e-05

Epoch 2/15

1682/1682 [==============================] - 1905s 1s/step - loss: 1.8327 - accuracy: 0.5090 - val\_loss: 1.2357 - val\_accuracy: 0.5016 - lr: 5.0000e-05

Epoch 3/15

1682/1682 [==============================] - 1800s 1s/step - loss: 0.9481 - accuracy: 0.5487 - val\_loss: 0.7868 - val\_accuracy: 0.5057 - lr: 5.0000e-05

Epoch 4/15

1682/1682 [==============================] - 1785s 1s/step - loss: 0.5983 - accuracy: 0.7153 - val\_loss: 0.7791 - val\_accuracy: 0.5158 - lr: 5.0000e-05

Epoch 5/15

1682/1682 [==============================] - 1784s 1s/step - loss: 0.3200 - accuracy: 0.8843 - val\_loss: 1.0020 - val\_accuracy: 0.5211 - lr: 5.0000e-05

Epoch 6/15

1682/1682 [==============================] - 1787s 1s/step - loss: 0.1286 - accuracy: 0.9656 - val\_loss: 1.5870 - val\_accuracy: 0.5180 - lr: 5.0000e-05

Epoch 7/15

1682/1682 [==============================] - 1791s 1s/step - loss: 0.0460 - accuracy: 0.9915 - val\_loss: 2.1342 - val\_accuracy: 0.5188 - lr: 2.5000e-05

2883/2883 [==============================] - 6s 2ms/step

Evaluation Metrics:

Precision: 0.5095

Recall: 0.8218

F1 Score: 0.6291

ROC AUC: 0.5236

PR AUC: 0.5148

MCC: 0.0390

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: 0.5126

Recall: 0.7281

F1 Score: 0.6016

ROC AUC: 0.5236

PR AUC: 0.5148

MCC: 0.0395

In [9]: 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: 0.5172

Recall: 0.4266

F1 Score: 0.4675

ROC AUC: 0.5236

PR AUC: 0.5148

MCC: 0.0289

Εικόνα που περιέχει κείμενο, γράφημα, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, πολυχρωμία

Περιγραφή που δημιουργήθηκε αυτόματα

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

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, οθόνη, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, γράφημα, διάγραμμα, στιγμιότυπο οθόνης

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, λογισμικό

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

157/157 [==============================] - 0s 3ms/step

Intercept 0.6111840774892169

Prediction\_local [0.60418011]

Right: 0.5753165

Feature Importances (Coefficients):

Predicate: 0.053794184084276116

Object: -0.038985412950269124

Subject: -0.021812740910479307

Triplet 2 (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 3ms/step

Intercept 0.6472971888200098

Prediction\_local [0.5592418]

Right: 0.56678957

Feature Importances (Coefficients):

Object: -0.07919087268386855

Predicate: -0.030365948906867293

Subject: 0.021501436875342707

Triplet 3 (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 3ms/step

Intercept 0.6322954410412999

Prediction\_local [0.57907753]

Right: 0.6687715

Feature Importances (Coefficients):

Predicate: -0.052368061173450636

Subject: -0.02350061709983057

Object: 0.022650766587444436

Triplet 4 (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 3ms/step

Intercept 0.5885235068474738

Prediction\_local [0.70818241]

Right: 0.6998887

Feature Importances (Coefficients):

Subject: 0.08623273353253524

Object: 0.04380168648167122

Predicate: -0.010375515262261416

Triplet 5 (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 3ms/step

Intercept 0.5950797959713439

Prediction\_local [0.68598053]

Right: 0.7082771

Feature Importances (Coefficients):

Predicate: 0.058244085447810394

Object: 0.05492781136287658

Subject: -0.022271166300167265