Epoch 1/15

3363/3363 [==============================] - 1604s 476ms/step - loss: 1.9714 - accuracy: 0.7256 - val\_loss: 0.5124 - val\_accuracy: 0.7498 - lr: 1.0000e-04

Epoch 2/15

3363/3363 [==============================] - 1528s 454ms/step - loss: 0.4891 - accuracy: 0.7501 - val\_loss: 0.5087 - val\_accuracy: 0.7499 - lr: 1.0000e-04

Epoch 3/15

3363/3363 [==============================] - 1522s 453ms/step - loss: 0.4446 - accuracy: 0.7612 - val\_loss: 0.5672 - val\_accuracy: 0.7545 - lr: 1.0000e-04

Epoch 4/15

3363/3363 [==============================] - 1526s 454ms/step - loss: 0.3711 - accuracy: 0.8104 - val\_loss: 0.7677 - val\_accuracy: 0.7254 - lr: 1.0000e-04

Epoch 5/15

3363/3363 [==============================] - 1520s 452ms/step - loss: 0.2629 - accuracy: 0.8799 - val\_loss: 1.0158 - val\_accuracy: 0.6663 - lr: 7.0000e-05

5765/5765 [==============================] - 58s 10ms/step

Evaluation Metrics:

Precision: 0.5077

Recall: 0.1992

F1 Score: 0.2862

ROC AUC: 0.6774

PR AUC: 0.3888

MCC: 0.1963

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: 0.5470

Recall: 0.0173

F1 Score: 0.0335

ROC AUC: 0.6774

PR AUC: 0.3888

MCC: 0.0612

In [7]: 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: 0.0000

Recall: 0.0000

F1 Score: 0.0000

ROC AUC: 0.6774

PR AUC: 0.3888

MCC: -0.0013

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, οθόνη

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει στιγμιότυπο οθόνης, κείμενο, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, γραμμή, διάγραμμα, γράφημα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, διάγραμμα, γράφημα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, σχεδίαση

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, διάγραμμα, γραμμή, γράφημα

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 [==============================] - 2s 13ms/step

Intercept 0.23352225275347943

Prediction\_local [-0.01059735]

Right: 4.2584625e-06

Feature Importances (Coefficients):

Predicate: -0.22903454350343386

Object: -0.018315044500301386

Subject: 0.0032299890885834274

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 [==============================] - 2s 12ms/step

Intercept 0.18638777953721716

Prediction\_local [0.18369727]

Right: 0.18283366

Feature Importances (Coefficients):

Object: -0.029407823510303133

Subject: 0.014639834557777886

Predicate: 0.012077483277630011

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 [==============================] - 2s 12ms/step

Intercept 0.11105515531013903

Prediction\_local [0.31603783]

Right: 0.3187968

Feature Importances (Coefficients):

Predicate: 0.1421403990826761

Object: 0.048023137195721245

Subject: 0.014819137580793123

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 [==============================] - 2s 12ms/step

Intercept 0.1799888938851059

Prediction\_local [0.19368642]

Right: 0.17186679

Feature Importances (Coefficients):

Object: 0.020901592505116383

Subject: -0.01604546858782958

Predicate: 0.008841399358086248

Triplet 5 (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 [==============================] - 2s 12ms/step

Intercept 0.1454004320113417

Prediction\_local [0.23538214]

Right: 0.26078153

Feature Importances (Coefficients):

Predicate: 0.13791283427058088

Object: -0.033288186440104006

Subject: -0.014642938119708423