Epoch 1/15

1682/1682 [==============================] - 767s 453ms/step - loss: 3.9112 - accuracy: 0.6333 - val\_loss: 0.5098 - val\_accuracy: 0.6850 - lr: 1.0000e-04

Epoch 2/15

1682/1682 [==============================] - 761s 452ms/step - loss: 0.4461 - accuracy: 0.7316 - val\_loss: 0.5037 - val\_accuracy: 0.6815 - lr: 1.0000e-04

Epoch 3/15

1682/1682 [==============================] - 761s 452ms/step - loss: 0.3600 - accuracy: 0.7934 - val\_loss: 0.5876 - val\_accuracy: 0.6739 - lr: 1.0000e-04

Epoch 4/15

1682/1682 [==============================] - 761s 452ms/step - loss: 0.2440 - accuracy: 0.8752 - val\_loss: 0.8906 - val\_accuracy: 0.6541 - lr: 1.0000e-04

Epoch 5/15

1682/1682 [==============================] - 762s 453ms/step - loss: 0.0993 - accuracy: 0.9583 - val\_loss: 1.8226 - val\_accuracy: 0.6429 - lr: 7.0000e-05

2883/2883 [==============================] - 30s 10ms/step

Evaluation Metrics:

Precision: 0.6421

Recall: 0.8259

F1 Score: 0.7225

ROC AUC: 0.7974

PR AUC: 0.8241

MCC: 0.3815

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: 0.8378

Recall: 0.4933

F1 Score: 0.6210

ROC AUC: 0.7974

PR AUC: 0.8241

MCC: 0.4364

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)

...:

...: # 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: 0.8732

Recall: 0.4760

F1 Score: 0.6161

ROC AUC: 0.7974

PR AUC: 0.8241

MCC: 0.4569

Εικόνα που περιέχει κείμενο, διάγραμμα, γράφημα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, πολυχρωμία, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, πολυχρωμία

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Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει γράφημα, διάγραμμα, γραμμή, κείμενο

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, σχεδίαση

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, διάγραμμα, γράφημα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Triplet 1 (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 0.24823557977282185

Prediction\_local [0.57359858]

Right: 0.7092333

Feature Importances (Coefficients):

Object: 0.23457653050177232

Predicate: 0.09707131920997268

Subject: -0.006284849606806786

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 0.2174886544837095

Prediction\_local [0.46996]

Right: 0.50110376

Feature Importances (Coefficients):

Predicate: 0.31768927800887203

Object: -0.0751560968126352

Subject: 0.009938161022164722

Triplet 3 (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 11ms/step

Intercept 0.46028222238513783

Prediction\_local [0.08397395]

Right: 0.07877969

Feature Importances (Coefficients):

Predicate: -0.3573550422725667

Object: -0.02229686391777203

Subject: 0.0033436356086772676

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 [==============================] - 2s 11ms/step

Intercept 0.49026473455671904

Prediction\_local [0.04269483]

Right: 0.045319807

Feature Importances (Coefficients):

Predicate: -0.3620800102157867

Object: -0.08152413879855973

Subject: -0.003965758449089639

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 [==============================] - 2s 11ms/step

Intercept 0.1940869535591655

Prediction\_local [0.46347838]

Right: 0.29567504

Feature Importances (Coefficients):

Predicate: 0.3167742783982722

Object: -0.056298284259358615

Subject: 0.008915432203699983