Epoch 1/15

3363/3363 [==============================] - 1597s 474ms/step - loss: 2.1693 - accuracy: 0.7493 - val\_loss: 0.4902 - val\_accuracy: 0.7500 - lr: 1.0000e-04

Epoch 2/15

3363/3363 [==============================] - 1597s 475ms/step - loss: 0.4625 - accuracy: 0.7560 - val\_loss: 0.4799 - val\_accuracy: 0.7640 - lr: 1.0000e-04

Epoch 3/15

3363/3363 [==============================] - 1595s 474ms/step - loss: 0.3745 - accuracy: 0.8151 - val\_loss: 0.5702 - val\_accuracy: 0.7180 - lr: 1.0000e-04

Epoch 4/15

3363/3363 [==============================] - 1582s 470ms/step - loss: 0.2341 - accuracy: 0.9040 - val\_loss: 0.8036 - val\_accuracy: 0.6902 - lr: 1.0000e-04

Epoch 5/15

3363/3363 [==============================] - 1582s 470ms/step - loss: 0.1096 - accuracy: 0.9634 - val\_loss: 1.1211 - val\_accuracy: 0.6793 - lr: 7.0000e-05

5765/5765 [==============================] - 62s 11ms/step

Evaluation Metrics:

Precision: 0.5638

Recall: 0.2256

F1 Score: 0.3222

ROC AUC: 0.7290

PR AUC: 0.4412

MCC: 0.2416

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}')

...:

C:\Users\skape\PycharmProjects\Thesis\_tensorflow\.venv\lib\site-packages\sklearn\metrics\\_classification.py:1471: UndefinedMetricWarning: Precision is ill-defined and being set to 0.0 due to no predicted samples. Use `zero\_division` parameter to control this behavior.

\_warn\_prf(average, modifier, msg\_start, len(result))

Evaluation Metrics:

Precision: 0.0000

Recall: 0.0000

F1 Score: 0.0000

ROC AUC: 0.7290

PR AUC: 0.4412

MCC: 0.0000

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}')

...:

C:\Users\skape\PycharmProjects\Thesis\_tensorflow\.venv\lib\site-packages\sklearn\metrics\\_classification.py:1471: UndefinedMetricWarning: Precision is ill-defined and being set to 0.0 due to no predicted samples. Use `zero\_division` parameter to control this behavior.

\_warn\_prf(average, modifier, msg\_start, len(result))

Evaluation Metrics:

Precision: 0.0000

Recall: 0.0000

F1 Score: 0.0000

ROC AUC: 0.7290

PR AUC: 0.4412

MCC: 0.0000

Εικόνα που περιέχει διάγραμμα, γράφημα, γραμμή, κείμενο

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, σχεδίαση

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, διάγραμμα, γράφημα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, γραμμή, γράφημα, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, γραμμή, λογισμικό

Περιγραφή που δημιουργήθηκε αυτόματα

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

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

Intercept 0.15211829986065878

Prediction\_local [-0.01367564]

Right: 1.1558705e-07

Feature Importances (Coefficients):

Predicate: -0.14659799738254836

Subject: -0.01732579860378557

Object: -0.0018701473967795905

Triplet 2 (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 0.14977093592290447

Prediction\_local [-0.01104369]

Right: 1.6486965e-07

Feature Importances (Coefficients):

Predicate: -0.14326142652532697

Subject: -0.009577567336453773

Object: -0.00797563590289548

Triplet 3 (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 12ms/step

Intercept 0.006387450560280616

Prediction\_local [0.38123949]

Right: 0.35693476

Feature Importances (Coefficients):

Predicate: 0.33986454950445216

Subject: 0.03439030505539462

Object: 0.0005971844738347243

Triplet 4 (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 13ms/step

Intercept 0.09824171599102847

Prediction\_local [0.03685951]

Right: 0.0064061396

Feature Importances (Coefficients):

Subject: -0.027606360788032983

Predicate: -0.024313797540463963

Object: -0.00946204621115813

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 [==============================] - 2s 14ms/step

Intercept 0.09537291484973923

Prediction\_local [0.03644232]

Right: 0.0011740911

Feature Importances (Coefficients):

Predicate: -0.10442653863971166

Subject: 0.03283322886652172

Object: 0.012662715440159745