2024-05-04 02:50:55.531807: I tensorflow/core/platform/cpu\_feature\_guard.cc:182] This TensorFlow binary is optimized to use available CPU instructions in performance-critical operations.

To enable the following instructions: SSE SSE2 SSE3 SSE4.1 SSE4.2 AVX AVX2 FMA, in other operations, rebuild TensorFlow with the appropriate compiler flags.

Epoch 1/15

3363/3363 [==============================] - 8488s 3s/step - loss: 5.2815 - accuracy: 0.6639 - val\_loss: 0.8673 - val\_accuracy: 0.7020 - lr: 5.0000e-05

Epoch 2/15

3363/3363 [==============================] - 8201s 2s/step - loss: 0.6172 - accuracy: 0.7404 - val\_loss: 0.5315 - val\_accuracy: 0.7166 - lr: 5.0000e-05

Epoch 3/15

3363/3363 [==============================] - 8207s 2s/step - loss: 0.4244 - accuracy: 0.8238 - val\_loss: 0.5631 - val\_accuracy: 0.7213 - lr: 5.0000e-05

Epoch 4/15

3363/3363 [==============================] - 8214s 2s/step - loss: 0.3138 - accuracy: 0.8957 - val\_loss: 0.6129 - val\_accuracy: 0.7288 - lr: 5.0000e-05

Epoch 5/15

3363/3363 [==============================] - 9023s 3s/step - loss: 0.1952 - accuracy: 0.9432 - val\_loss: 0.7680 - val\_accuracy: 0.7177 - lr: 2.5000e-05

2883/2883 [==============================] - 347s 120ms/step

Evaluation Metrics:

Precision: 0.8300

Recall: 0.5363

F1 Score: 0.6516

ROC AUC: 0.8282

PR AUC: 0.8487

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)

...:

...: # 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}')

Evaluation Metrics:

Precision: 0.8971

Recall: 0.4941

F1 Score: 0.6372

ROC AUC: 0.8282

PR AUC: 0.8487

In [12]: 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)

...:

...: # 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}')

Evaluation Metrics:

Precision: 0.9326

Recall: 0.4768

F1 Score: 0.6310

ROC AUC: 0.8282

PR AUC: 0.8487

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, λογισμικό, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, οθόνη, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

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

Περιγραφή που δημιουργήθηκε αυτόματα

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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 [==============================] - 42s 238ms/step

Intercept 0.243351542316104

Prediction\_local [0.07668865]

Right: 0.09158245

Feature Importances (Coefficients):

Predicate: -0.22033170788161496

Subject: 0.048611053718881934

Object: 0.005057759404129516

Triplet 2 (Original):

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

157/157 [==============================] - 35s 223ms/step

Intercept 0.14458509019532084

Prediction\_local [0.50917219]

Right: 0.54149926

Feature Importances (Coefficients):

Predicate: 0.32080358986897695

Object: 0.04646649942864138

Subject: -0.002682991652638341

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 [==============================] - 38s 243ms/step

Intercept 0.21479600764493698

Prediction\_local [0.24921885]

Right: 0.28306776

Feature Importances (Coefficients):

Predicate: -0.06042173416689282

Subject: 0.05487731858786757

Object: 0.03996725775622551

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 [==============================] - 40s 254ms/step

Intercept 0.3084241425411863

Prediction\_local [0.02298957]

Right: 0.029948324

Feature Importances (Coefficients):

Object: -0.11462581148909431

Subject: -0.09173364593930027

Predicate: -0.07907511122778951

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 [==============================] - 43s 272ms/step

Intercept 0.240221647578462

Prediction\_local [0.23031817]

Right: 0.10365845

Feature Importances (Coefficients):

Predicate: -0.0662572385652107

Object: 0.03638559094153767

Subject: 0.019968169010343373