2024-05-02 23:57:35.596127: 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

1682/1682 [==============================] - 5340s 3s/step - loss: 5.5134 - accuracy: 0.4996 - val\_loss: 1.7197 - val\_accuracy: 0.4962 - lr: 5.0000e-05

Epoch 2/15

1682/1682 [==============================] - 5299s 3s/step - loss: 1.2267 - accuracy: 0.5007 - val\_loss: 0.8843 - val\_accuracy: 0.4991 - lr: 5.0000e-05

Epoch 3/15

1682/1682 [==============================] - 5374s 3s/step - loss: 0.8454 - accuracy: 0.5001 - val\_loss: 0.7608 - val\_accuracy: 0.5012 - lr: 5.0000e-05

Epoch 4/15

1682/1682 [==============================] - 5051s 3s/step - loss: 0.7609 - accuracy: 0.5002 - val\_loss: 0.7283 - val\_accuracy: 0.4986 - lr: 5.0000e-05

Epoch 5/15

1682/1682 [==============================] - 4830s 3s/step - loss: 0.7284 - accuracy: 0.4996 - val\_loss: 0.7139 - val\_accuracy: 0.5006 - lr: 5.0000e-05

Epoch 6/15

1682/1682 [==============================] - 4833s 3s/step - loss: 0.7113 - accuracy: 0.5004 - val\_loss: 0.7049 - val\_accuracy: 0.4995 - lr: 5.0000e-05

Epoch 7/15

1682/1682 [==============================] - 4830s 3s/step - loss: 0.7020 - accuracy: 0.4993 - val\_loss: 0.6981 - val\_accuracy: 0.4990 - lr: 5.0000e-05

Epoch 8/15

1682/1682 [==============================] - 5039s 3s/step - loss: 0.6970 - accuracy: 0.4993 - val\_loss: 0.6951 - val\_accuracy: 0.4997 - lr: 5.0000e-05

Epoch 9/15

1682/1682 [==============================] - 5462s 3s/step - loss: 0.6946 - accuracy: 0.4986 - val\_loss: 0.6942 - val\_accuracy: 0.4991 - lr: 5.0000e-05

Epoch 10/15

1682/1682 [==============================] - 6003s 4s/step - loss: 0.6940 - accuracy: 0.4995 - val\_loss: 0.6938 - val\_accuracy: 0.5000 - lr: 5.0000e-05

Epoch 11/15

1682/1682 [==============================] - 5124s 3s/step - loss: 0.6937 - accuracy: 0.5000 - val\_loss: 0.6935 - val\_accuracy: 0.5000 - lr: 5.0000e-05

Epoch 12/15

1682/1682 [==============================] - 5060s 3s/step - loss: 0.6935 - accuracy: 0.5000 - val\_loss: 0.6935 - val\_accuracy: 0.5000 - lr: 5.0000e-05

Epoch 13/15

1682/1682 [==============================] - 5277s 3s/step - loss: 0.6936 - accuracy: 0.4995 - val\_loss: 0.6937 - val\_accuracy: 0.5000 - lr: 5.0000e-05

Epoch 14/15

1682/1682 [==============================] - 5431s 3s/step - loss: 0.6934 - accuracy: 0.4993 - val\_loss: 0.6933 - val\_accuracy: 0.5000 - lr: 2.5000e-05

Epoch 15/15

1682/1682 [==============================] - 5434s 3s/step - loss: 0.6933 - accuracy: 0.4988 - val\_loss: 0.6935 - val\_accuracy: 0.5000 - lr: 2.5000e-05

2883/2883 [==============================] - 344s 119ms/step

Evaluation Metrics:

Precision: 0.5000

Recall: 1.0000

F1 Score: 0.6667

ROC AUC: 0.5000

PR AUC: 0.5000

MCC: 0.0000

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: 0.5000

PR AUC: 0.5000

MCC: 0.0000

In [15]: 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: 0.5000

PR AUC: 0.5000

MCC: 0.0000

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, γραμμή

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, γράφημα

Περιγραφή που δημιουργήθηκε αυτόματα

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

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Περιγραφή που δημιουργήθηκε αυτόματα

Triplet 1 (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 [==============================] - 19s 119ms/step

Intercept 0.5000327229499816

Prediction\_local [0.50003272]

Right: 0.5000327

Feature Importances (Coefficients):

Predicate: 3.908548005924622e-32

Object: 1.7825958097595055e-32

Subject: -6.676719897160764e-33

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 [==============================] - 18s 118ms/step

Intercept 0.5000327229499816

Prediction\_local [0.50003272]

Right: 0.5000327

Feature Importances (Coefficients):

Subject: -6.150428040981273e-32

Predicate: -1.35143473985812e-32

Object: 9.283089807139697e-34

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 [==============================] - 19s 123ms/step

Intercept 0.5000327229499816

Prediction\_local [0.50003272]

Right: 0.5000327

Feature Importances (Coefficients):

Object: -2.820232815184464e-32

Predicate: -1.3418998988799188e-32

Subject: 5.024690049439595e-33

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 [==============================] - 19s 119ms/step

Intercept 0.5000327229499818

Prediction\_local [0.50003272]

Right: 0.5000327

Feature Importances (Coefficients):

Subject: 4.2295344287930233e-32

Object: 2.2598497777306306e-32

Predicate: 7.114934823529821e-33

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 [==============================] - 19s 120ms/step

Intercept 0.5000327229499816

Prediction\_local [0.50003272]

Right: 0.5000327

Feature Importances (Coefficients):

Predicate: 8.023095294654875e-32

Object: -6.679341074886195e-32

Subject: 2.0396159459712257e-32