Epoch 1/50

WARNING:tensorflow:You are casting an input of type complex64 to an incompatible dtype float32. This will discard the imaginary part and may not be what you intended.

WARNING:tensorflow:You are casting an input of type complex64 to an incompatible dtype float32. This will discard the imaginary part and may not be what you intended.

1682/1682 [==============================] - ETA: 0s - loss: 2748.0776 - accuracy: 0.5634WARNING:tensorflow:You are casting an input of type complex64 to an incompatible dtype float32. This will discard the imaginary part and may not be what you intended.

2024-06-10 08:24:26.990672: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-06-10 08:25:05.923362: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

2024-06-10 08:25:18.661013: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

2024-06-10 08:25:19.754221: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 2463498240 exceeds 10% of free system memory.

1682/1682 [==============================] - 2534s 2s/step - loss: 2748.0776 - accuracy: 0.5634 - val\_loss: 2675.4980 - val\_accuracy: 0.5438 - lr: 1.0000e-04

Epoch 2/50

1682/1682 [==============================] - ETA: 0s - loss: 2631.1006 - accuracy: 0.57482024-06-10 09:05:27.810846: W tensorflow/tsl/framework/cpu\_allocator\_impl.cc:83] Allocation of 21018624000 exceeds 10% of free system memory.

1682/1682 [==============================] - 2460s 1s/step - loss: 2631.1006 - accuracy: 0.5748 - val\_loss: 2698.1216 - val\_accuracy: 0.4979 - lr: 1.0000e-04

Epoch 3/50

1682/1682 [==============================] - 2412s 1s/step - loss: 2272.1331 - accuracy: 0.5966 - val\_loss: 2898.1763 - val\_accuracy: 0.5048 - lr: 1.0000e-04

Epoch 4/50

1682/1682 [==============================] - 2682s 2s/step - loss: 1807.2004 - accuracy: 0.7987 - val\_loss: 3263.5664 - val\_accuracy: 0.5201 - lr: 1.0000e-04

Epoch 5/50

1682/1682 [==============================] - 2528s 2s/step - loss: 1654.7874 - accuracy: 0.9591 - val\_loss: 4143.3984 - val\_accuracy: 0.5558 - lr: 1.0000e-04

Epoch 6/50

1682/1682 [==============================] - ETA: 0s - loss: 1640.5453 - accuracy: 0.9855

Epoch 6: ReduceLROnPlateau reducing learning rate to 5.999999848427251e-05.

1682/1682 [==============================] - 2391s 1s/step - loss: 1640.5453 - accuracy: 0.9855 - val\_loss: 4512.8916 - val\_accuracy: 0.5750 - lr: 1.0000e-04

WARNING:tensorflow:You are casting an input of type complex64 to an incompatible dtype float32. This will discard the imaginary part and may not be what you intended.

2883/2883 [==============================] - 85s 29ms/step

Evaluation Metrics:

Precision: 0.5264

Recall: 0.9182

F1 Score: 0.6692

ROC AUC: 0.7060

PR AUC: 0.7722

MCC: 0.1383

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)

...:

...: # Confusion Matrix

...: conf\_matrix = confusion\_matrix(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}')

...: 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)

...:

...: # Confusion Matrix

...: conf\_matrix = confusion\_matrix(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: 0.8846

Recall: 0.4129

F1 Score: 0.5630

ROC AUC: 0.7060

PR AUC: 0.7722

MCC: 0.4245

Evaluation Metrics:

Precision: 0.9888

Recall: 0.3397

F1 Score: 0.5057

ROC AUC: 0.7060

PR AUC: 0.7722

MCC: 0.4453

Εικόνα που περιέχει κείμενο, γράφημα, διάγραμμα, γραμμή

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, γραμμή, γράφημα, διάγραμμα

Περιγραφή που δημιουργήθηκε αυτόματα

Εικόνα που περιέχει κείμενο, στιγμιότυπο οθόνης, διάγραμμα, πολυχρωμία

Περιγραφή που δημιουργήθηκε αυτόματα

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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 [==============================] - 5s 33ms/step

Intercept 0.5554759121297104

Prediction\_local [0.59355628]

Right: 0.5985919

Feature Importances (Coefficients):

Object: 0.03778262668138347

Subject: 0.0006603779182579874

Predicate: -0.0003626415630280421

Triplet 2 (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 [==============================] - 5s 33ms/step

Intercept 0.5599680746202277

Prediction\_local [0.56804007]

Right: 0.5713545

Feature Importances (Coefficients):

Object: 0.009796385307204999

Subject: -0.001829825500310189

Predicate: 0.00010543280984922185

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 [==============================] - 5s 32ms/step

Intercept 0.5581500025058928

Prediction\_local [0.57145759]

Right: 0.57481515

Feature Importances (Coefficients):

Object: 0.010692517710411851

Subject: 0.003358057649517264

Predicate: -0.0007429913261546199

Triplet 4 (Original):

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

157/157 [==============================] - 5s 31ms/step

Intercept 0.5559861833999131

Prediction\_local [0.59226462]

Right: 0.4958061

Feature Importances (Coefficients):

Object: 0.035897634249568246

Subject: 0.0008942446173180603

Predicate: -0.0005134451679189828

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 [==============================] - 6s 35ms/step

Intercept 0.5818215947190294

Prediction\_local [0.48966178]

Right: 0.5883804

Feature Importances (Coefficients):

Object: -0.08975003193146959

Subject: -0.0020136808496410263

Predicate: -0.000396098328982054