

ps

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December 2023

1 Introduction

Algorithm 1 Sarcasm Detection and Sentiment Update

Require: df_sarcastic (sarcasm dataset), df (original dataset)

Ensure: df (updated original dataset with sarcasm predictions and updated sentiment scores)

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1: df_sarcastic ← LOAD("path_to_sarcasm_dataset.csv")
2: comments, labels ← PREPROCESS(df_sarcastic)
3: comments_train, comments_test, labels_train, labels_test ←
   SPLIT(comments, labels, test_size=0.2)
4: vectorizer ← INITIALIZE_TFIDF()
5: comments_train_tfidf, comments_test_tfidf ← TRANS-
   FORM(comments_train, comments_test, vectorizer)
6: model ← TRAIN_MODEL(comments_train_tfidf, labels_train)
7: accuracy ← EVALUATE_MODEL(model, comments_test_tfidf, labels_test)
8: comments_original_tfidf ← TRANSFORM(df['comment_body'], vectorizer)
9: df['is_sarcastic'] ← PREDICT(model, comments_original_tfidf)
10: df['probability_sarcastic'] ← PREDICT_PROBA(model, com-
    ments_original_tfidf)
11: df ← UPDATE_SENTIMENT(df) return df
```
