

DETECTIVE BERT: A TRANSFORMATIVE APPROACH TO EVIDENCE DETECTION

Tasked with determining the relevance of evidence to corresponding claims, this project involved working with a dataset of over 21,000 claim-evidence pairs for training and approximately 6,000 pairs for validation

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INTRODUCTION

- This project focused on evidence detection within a natural language processing (NLP) framework, identifying whether a given piece of evidence supports a corresponding claim.
- I implemented a BERT-based model to perform pairwise sequence classification, enabling accurate assessment of evidence relevance.

TEXT PREPROCESSING

- White space elimination removes unnecessary spaces, tabs, or newline characters to ensure consistent formatting and reduce noise in the data.
- Lowercasing text standardizes words (e.g., "The" vs "the"), which helps improve model performance and reduces vocabulary size.

DATA LOADER

- A data loader feeds batches of tokenized text and labels to the model during training or evaluation
- It handles batching, shuffling, and efficient loading to improve the data pipeline
- This improves training speed and model performance

VISUALISING RESULTS

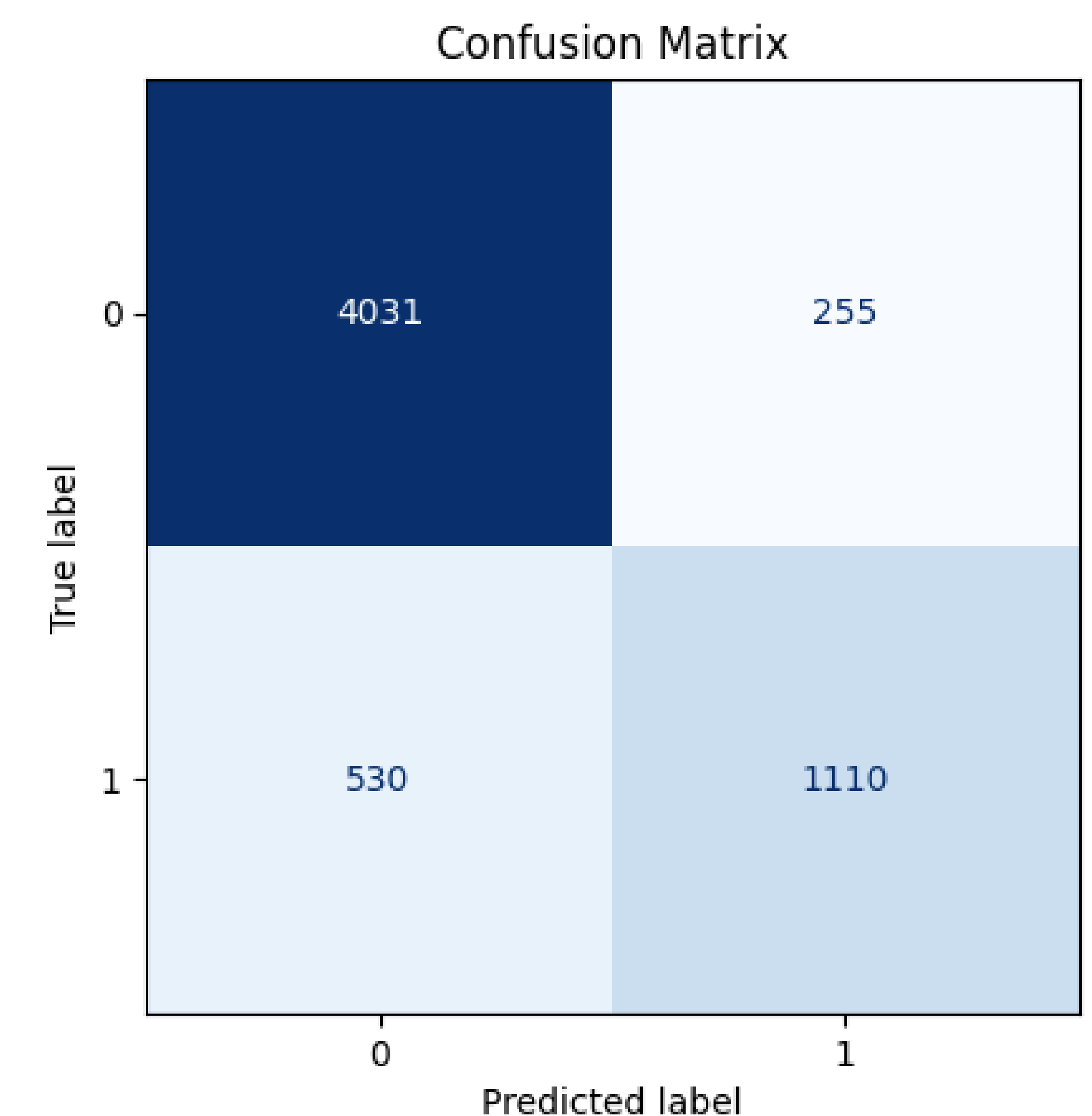
Evaluation metrics included:

- Accuracy
- F1 Score
- Confusion Matrix

ACCURACY



F1 SCORE



THE MODEL

- I used bert-based-uncased as the base model for this task
- BERT is a transformer based model that can understand natural language as an input
- In this case the model outputted a binary classification predicting the relationship between the evidence and claim

TRIAL AND ERROR

- A process of trial and error was used to fine tune hyper parameters
- A more sophisticated and systematic approach could be used in the future

