

**Title:** Automatic detection of actionable radiology reports using bidirectional encoder representations from transformers

**Version:** 1 **Date:** 12 Apr 2021

**Reviewer's report:**

This paper compares statistical machine learning with logistic regression and with gradient boosting decision tree, and deep learning with a publicly available Japanese BERT model, which were applied to radiology reports alone and pairs of order information and radiology reports for achieve prediction with good performance.

The authors showed the result of the BERT model is more useful for distinguishing various actionable radiology reports from non-actionable ones than models based on statistical machine learning.

-Methods

Isn't the objective variable as actionable 0.62% too small? Can you build a model?

Did five-fold cross-validation apply to BERT only?

-Results

This should be Table.2 not Table.3 in line 6 of Result section, shouldn't it?

Please define "the 12 attention heads" in Result section.

The Figure.6a and 6b should be described in detail.

You should show which of the sixteen truly actionable reports (38%) were implicit in the test set.

-Discussion

Clearly mention the reason of methods detected actionable reports in Table 5 in Discussion section.