

# How does the inference latency and classification robustness of AutoML pipelines compare to deep learning mode

Assignee Research

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## Abstract

Stress and depression are prevalent nowadays across people of all ages due to the quick paces of life. People use social media to express their feelings. Thus, social media constitute a valuable form of information for the early detection of stress and depression. Although many research works have been introduced targeting the early recognition of stress and depression, there are still limitations. There have been proposed multi-task learning settings, which use depression and emotion (or figurative language) as the primary and auxiliary tasks respectively. However, although stress is inextric

## 1 Introduction

This paper examines: Multitask learning for recognizing stress and depression in social media. Research question: How does the inference latency and classification robustness of AutoML pipelines compare to deep learning models when detecting adversarial spam patterns in non-English social media text?.

## 2 Methodology

Systematic literature search across multiple databases yielded 10 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 4.5/10.

## 3 Results

10 papers retrieved. 16 claims extracted; 2 independently verified. Quality review score: 4.5/10.

## 4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.



## 5 Extracted Claims

Claim	Verified	Confidence
The study predicts stressful and depressive posts using a multi-task learning setting with two different datasets collec	×	0.12
The study utilizes shared layers, task-specific layers, and attention fusion networks.	✓	0.15
This is the first study utilizing attention fusion networks for predicting stress and depression through social media po	✓	0.21
The proposed approaches achieve notable performance gains compared to single-task learning models, transfer learning str	×	0.05
Zhou et al. (2021) introduced a multi-task learning framework where the main task is identifying depressive posts and th	×	0.07
Zhou et al. (2021) used a hierarchical neural network consisting of a sentence encoder and a document encoder enhanced w	×	0.03
Wang et al. (2022) employed a multitask learning setting with multimodal inputs to predict online depressed users in Wei	×	0.04
In Wang et al. (2022), the main task was manually extracted statistical feature classification, and the auxiliary task w	×	0.05
Ghosh et al. (2022a) introduced a multitask learning approach with emotion recognition as the primary task and depressio	×	0.14
Ghosh et al. (2022a) found that secondary tasks improve the performance of the primary task, whereas single-task learnin	×	0.06
Turcan et al. (2021) experimented with three methods for integrating emotion information into stress detection: alternat	×	0.08
Turcan et al. (2021) used the Turcan and McKeeown (2019) dataset for stress detection and the GoEmotions dataset (Demszky	×	0.06
In the study by Turcan et al. (2021), alternating multi-task models are defined as two single-task models sharing the sa	×	0.05
The performance of BERT reported in the study was obtained by Yang et al. (2022).	×	0.02
The study compares its approaches against M-BERT (top2vec) as reported by Ilias et al. (2023).	×	0.03
Results of the introduced approaches are reported in Tables 1 and 2.	×	0.02

## References

- <http://arxiv.org/abs/2305.18907v2>
- <http://arxiv.org/abs/2306.11113v2>
- <http://arxiv.org/abs/1903.04717v2>