Decision Letter (TETCI-2023-1261)

From: ieeetetci.hk@gmail.com

To: dengfang@bit.edu.cn

CC:

Subject: Review of Manuscript TETCI-2023-1261

Body: TETCI-2023-1261
A Survey of Human-object Interaction Detection with Deep Learning

Dear Prof. Fang Deng:

I regret to inform you that based on the recommendation received from the associated editor your paper cannot be accepted for publication in the IEEE Transactions on Emerging Topics in Computational Intelligence. Please find review comments below that should help explain the reasoning behind this decision. I hope you find them useful. If the referees have attached a review file, you will need to retrieve it from your 'Author Center' at the IEEE Transactions on Emerging Topics in Computational Intelligence ScholarOne Manuscripts website; https://mc.manuscriptcentral.com/tetci-ieee. Check the 'Author Center' for more information when appropriate.

********** Associate Editor Comments for Authors: **********
Associate Editor
Comments to the Author:
The reviewers acknowledge that the paper provides a comprehensive survey on human-object interaction (HOI) detection with deep learning, covering various aspects such as definitions, applications, and methods. However, this paper still has a lot of room for improvement to meet the publication standards. This includes the need for greater clarity in the contributions, better analysis of existing limitations, deeper exploration of topics, and overall writing improvements. I would suggest improving clarity, depth, and novelty before resubmitting for further evaluation.

Based on the referee reports, and the Associate Editor's recommendation, I must reject your manuscript. However, you are encouraged to undertake a thorough and comprehensive revision of the manuscript according to the reviewers' comments, and resubmit it within 120 days through "create a resubmission" in the ScholarOne Manuscripts system. If you do decide to resubmit a significantly revised manuscript, please explain how you addressed the reviewers' comments clearly and also indicate the current manuscript number.

Thank you for your interest in the IEEE Transactions on Emerging Topics in Computational Intelligence.

Sincerely,
Prof. Yiu-ming Cheung
ieeetetci.hk@gmail.com, ymcheung1@yahoo.com
Editor-in-Chief, IEEE Transactions on Emerging Topics in Computational Intelligence

********** Reviews **********

Referee: 1

Comments to the Author
The paper provides a survey for human-object interaction detection with deep learning, including the definition, application, main problems, methods, datasets, metrics and future development. My concerns are as follows:
1. It is a little confusing that the paper classifies the HOI detection methods into three categories including two-stage methods, one-stage methods and transformer-based methods. However, methods related to foundation models are also discussed but not included in Table II.
2. In Table II, a large portion of methods are missing the time metrics, and it could be unfair due to the test setting (e.g., the used GPU). It is better to provide more comprehensive and fair comparisons on detection speed.
3. Instead of providing the trend of utilizing Transformer models and foundation models in the section of Future Direction, it is better to further analyze the limitations of existing methods and provide the promising directions for improvement.
4. In Fig. 1, should the HOI detection results be “Woman + Center + Eat + Donut + Lower Center” instead of “Woman + Eat + Donut”?
5. The writing needs improvement. For example, the paper mentions that additional features have also been used in two-stage methods but are not reflected in Equation (2). Moreover, “low time efficiency and high computational complexity” are presented twice in a single paragraph in Line 4-12, Page 4.

Referee: 2

Comments to the Author
This paper provides a detailed review of HOI detection. The main contribution is to provide a more scientific and accurate method to define and classify all HOI detection methods and divide HOI detection into three categories in detail. The paper is unique and innovative, but there are also some problems.
(1) Format problem: the font size of the horizontal and vertical coordinates of all curves should be consistent, and the fonts in all diagrams should also be unified. Some formulas in the paper lack punctuation marks, such as formulas (3) (4), etc.
(2) There are many tables and pictures in the paper. Some pictures are too large on the page and have poor readability, and the format of the reference section is not uniform and there are certain problems.
(3) The resolution of Figure 4 is low, and the review of various methods in different periods is best in the form of reference citations rather than author names.
(4) Sections 3, 4, and 5 in the paper respectively introduce the classification of the three HOI methods defined in this paper, but there is only one picture in each section for introduction. Too much text may lead to poor readability. For example, there are various subtitles in Section 3. Other pictures or tables can be inserted into the subtitles to increase the readability of the discussion.
(5) Section six introduces some methods related to basic models, such as zero-shot learning. However, this introduction is not detailed. Considering the current development prospects of HOI, this module should be the most promising part for research.
(6) In the last part of the paper, a full-page table compares some existing methods. Due to the large amount of data, the table is difficult to read. It is recommended to divide the table into blocks or use pictures and other forms for a more intuitive introduction.

Referee: 3

Comments to the Author
The paper novelty is not clear, the authors should clearly show what is the contribution of the paper when compared to the existing surveys. The discussion part is so limited without any take home message for the reader. The different pats of the paper are not well investigated, they are superficially introduced. The paper is also too short for a survey and many works are missing. To sum up, the overall merit of the paper is very weak and can't be considered for publication. The authors should take their time to improve, extend and propose novelty in the paper

Date Sent: 29-May-2024

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