Review form IJCAI-ECAI 2022
with some comments and explanations

Before reviewing, please take a look at our instructional videos about the reviewing process and about producing high quality reviews for IJCAI-ECAI. Further information is contained in the call for papers, and of course, in the FAQ (https://ijcai-22.org/faqs/).

Please note also that one role for the Senior PC Members is to rate every review as
> Exceeding expectations
> Met expectations
> Failed to meet expectations.

1. Please briefly summarize the main contributions of the paper in your own words. (Please do not include your evaluation of the paper here).

2. What are the main strengths of the paper?
Please focus on novelty, soundness, significance and impact, relevance to AI, clarity of exposition, and credibility with regard to reproducibility (as specified in our reproducibility guidelines).

- Novelty: *how novel are the concepts, problems addressed, and methods introduced in the paper?*
- Soundness: *Are the results in this paper technically sound ?*
- Significance and expected impact: *Are the results interesting and noteworthy ? will they be taken up by the AI community ?*
- Relevance to AI: *Is this paper relevant to AI and in particular to the IJCAI-ECAI conference ?*
- Clarity of exposition: *Is the paper well-organised and clearly written ?*
- Reproducibility : *Are the results credible ? and can they be reproduced ?* Please see our new reproducibility guidelines https://ijcai-22.org/reproducibility/ for the meaning of credible and for further details.

3. What opportunities are there to improve the paper?

4. What pressing questions do you have for the authors in the rebuttal ?
List (and number) only questions about specific issues here that
> **1) could directly influence your evaluation of the paper, and**
> **2) do not require providing new results.**

Typical questions include requests to clarify or justify particular issues, or about important relationships to other works.
5. Overall assessment.

 Options *there are **9** options and different descriptions than for previous IJCAIs and AAAIs*

- **Award Quality:** Truly groundbreaking work. This paper is likely to change our field. It should be considered for a best paper award. (Top 5% of accepted IJCAI papers.)
- **Strong Accept.** Inspiring. An excellent paper. This paper changed my thinking on this topic. I will fight for acceptance. (Top 15% of accepted IJCAI papers).
- **Clear Accept.** Interesting. A very good submission. I learned a lot from this paper. I vote and argue for acceptance. (Top 50% of accepted IJCAI papers.)
- **Weak Accept.** Useful. A good paper. The results and insights will benefit the field. I believe it should be accepted.
- **Borderline Accept.** Marginally above the acceptance threshold. Technically correct, but not particularly exciting or inspiring. Could be accepted more or less in its current form. Not a big loss if it is not included in the program. Please use sparingly.
- **Borderline Reject.** Marginally below the acceptance threshold. The paper has merits but there are key weaknesses. It would benefit from another revision. Can be rejected. But having it in the program would not be that bad. Please use sparingly.
- **Weak Reject.** Not good enough. Limited contribution. Needs more work and/or revisions. I believe it should be rejected.
- **Clear Reject**. Unclear contribution. Needs to be reworked and/or major revision. I vote and will argue for rejection.
- **Strong Reject.** Contribution is flawed. I will strongly argue for rejection.

6. Justify your score in a few lines. Please focus on novelty, soundness, significance, expected impact, relevance to AI, clarity of exposition, and credibility with regard to reproducibility.

7. Are the results in this paper easily reproducible ?
Please check our new reproducibility guidelines for more details
(https://ijcai-22.org/reproducibility/**)**

Options:
- **Convincing :** I am convinced that the obtained results can be reproduced, possibly with some effort. Key resources (e.g., proofs, code, data) are already available, will be made available upon acceptance, or good reasons as to why they are not (e.g., proprietary data or code) are reported in the paper. Key details (e.g., proofs,

experimental setup) are sufficiently well described but their exact recovery may require some work.
- **Credible: I** believe that the obtained results can, in principle, be reproduced. Even though key resources (e.g., proofs, code, data) are unavailable at this point, the key details (e.g., proof sketches, experimental setup) are sufficiently well described for an expert to confidently reproduce the main results, if given access to the missing resources.
- **Irreproducible:** It is not possible to reproduce the results from the description given in the paper. Some key details (e.g., proof sketches, experimental setup) are incomplete/unclear, or some key resources (e.g., proofs, code, data) are not furnished.

8. Independent of your judgement of the quality of the work, are there any ethical concerns with regard to responsible research or potential negative societal impacts of this submission that must be considered by IJCAI-ECAI 2022 before the paper can be accepted?
Papers with a yes here will undergo additional ethical screening by senior members of the program committee. In case of glaring violations of well accepted ethical principles, IJCAI-ECAI 2022 reserves the right to reject the submission.
Please check our Ethics Policy in the Call for papers for more details.

> **Options:**
>   - **Yes**
>   - **No**

9. If you just answered that further ethical screening is necessary, please provide a brief summary of the ethical issues and the way the authors have addressed them in their Ethics Statement.

10. How well does this paper align with your expertise?
Options
- **Expert:** This paper is within my core research focus and I am deeply knowledgeable about all the topics covered by the paper.
- **Knowledgeable:** This paper has overlaps with my core research focus and I am knowledgeable about most of the topics covered by the paper.
- **Somewhat knowledgeable:** This paper has little overlap with my research focus but I am somewhat knowledgeable about some of the topics covered by the paper.
- **Not knowledgeable:** I have little knowledge about most of the topics covered by the paper.

11. How confident are you in your evaluation?
Options
- **Very confident.** I have checked all points of the paper carefully. I am certain I did not miss any important aspects.

- **Confident.** I tried to check the key points in the paper. It is unlikely, though conceivable, that I missed some important aspects.
- **Somewhat confident.** I was unable to carefully check some of the details (proof, novelty, experimental design …) but I am able to defend my evaluation of the paper. It is quite likely that I missed some important aspects.
- **Not confident.** My evaluation is an educated guess.

12. Confidential comments to SPC, AC, and Program Chairs.