ICSE 2026 Review Process and Guidelines

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Based on ICSE 2022-25 Review Process and Guidelines by David Lo, Corina Passenau Abhik Roychoudhury, Margaret-Anne Storey, Daniela Damian, Andreas Zeller, Lori Pollock, and Massimiliano di Penta, *ICER 2021 training slides* by Amy Ko and Jan Vahrenhold with material from Arie van Deursen and Tao Xie

This Document is a Living Document

Revisions:

- V1.0 (February 21, 2025): First release. :-) Welcome to the PC
-

7. Reviewing

Review — *A Guideline*

1. Remember to refer to this slide when reviewing. Bookmark it!
2. Before reading a paper, remember the **reviewing criteria**.
3. Read the paper, and as you do, note **positive and negative aspects** for each of the five criteria.
4. Use your notes to **outline a review organized by the five criteria**, so authors can understand your judgments for each criteria.
5. **Draft your review** based on your outline.
6. Edit your review, making it as **constructive and clear as possible.** Even a very negative review should be respectful to the author(s), helping to educate them.
7. Based on your review and your assessment of the individual criteria, choose a **recommendation score**.

Characteristics of Constructive Reviews

1. Specific
   - E.g., “the font in Figure 2 is a bit small”
2. Gives examples
   - E.g., “Sometimes the coverage type is mandated, for example MCDC in aerospace.”
3. Relevant
   - Focuses on the most pertinent aspects of the work
4. Nuanced
   - E.g., “Section 1 was clear, but I found Section 2 hard to follow.”
5. Respectful
   - Treats you as though you have the ability to make the necessary improvements
6. Humble
   - E.g., “I prefer”, not “everyone prefers”

Adapted from Laura Inozemtseva’s ICSE 2024 Most Influential Paper Talk

Review Criteria

At ICSE, we evaluate papers against *five criteria*, as independently as possible.

- Novelty
- Rigor
- Relevance (of the contribution)
- Verifiability and Transparency
- Presentation

All these are defined in the Call for Papers (read!) and the associated Q&A (read!).
Both are ground truth for evaluating papers; but let's go a bit further into details.

Review — *Novelty*

The novelty and originality of contributed solutions, problem formulations, methodologies, theories and/or evaluations, i.e., the extent to which the paper is sufficiently original with respect to state-of-the-art.

Grounded in adequate review of prior work in a respective topic, it is up to the authors to convince you that the discoveries **advance our knowledge in some way**, whether it sheds more light on prior work, or adds a significant new insight. Note

- A **novel idea with great potential** can make a very valuable paper even **with only preliminary evaluation**, whereas
- An **incremental idea** might **need more support**.

Review — *Novelty*

Please take note of the following while evaluating novelty.

- **Avoid** penalizing a paper because a single paper was already published on the topic. Any missing citations can also be added – so papers missing citations can be novel.
- Need to **substantiate lack of novelty claims** with **concrete examples** of state-of-the-art to be compared to.
- **Avoid** penalizing "immature" work that contributes a really new idea for not yet having everything figured out about it. That can require multiple papers.
- Avoid personal biases of the paper topic in judging novelty.
- Novelty need **not only be in idea, it can be in suggesting new use-cases / workflows**.
- A novel **idea can be simple**; simplicity is valuable and does not equate to triviality.
- Do not penalize **negative results**, if they are **novel**.
- Published work that is **not peer-reviewed** (including arXiv preprints, theses, blog posts, or tech reports) cannot be taken into account for judging novelty.
- Papers published **after ICSE submission deadline** should also not be considered when judging novelty.

Review — *Rigor*

The soundness, clarity and depth of a technical or theoretical contribution, and the level of thoroughness and completeness of an evaluation.

The paper should **answer the questions it poses**, and it should do so **with rigor in its research methodology** (including **choosing an appropriate research methodology** and procedures).

This is an important difference between research papers and other kinds of knowledge sharing (e.g., experience reports), and the source of certainty researchers can offer. In that sense, rigor goes *beyond* checking soundness of paper. It would also be a check on whether the authors have thought the problem through.

Review — *Rigor*

Please take note of the following while evaluating Rigor.

- **Avoid** applying criteria for quantitative methods to qualitative methods or industrial studies (e.g., critiquing a case study for a “small N” makes no sense; that is the point of a case study).
- Every contribution has limitations with respect to **generalizability**. **Welcome contributions from studies where generalizability is not possible or is not the goal**, and that clearly explain assumptions and scope of contribution.
- **Formal claims** are appropriate if the assumptions are clearly stated.

Review — *Relevance*

The extent to which the paper's contributions beyond prior work in terms of implications for software engineering research and practice, and if needed, under which assumptions

In all generality, **impact relates to advances in the practice of software engineering** (including making software less costly, more maintainable, more reliable, more reusable, safer, more secure, more usable … – this is not an exhaustive list)

Note that it is the **authors' responsibility** to explain and interpret the relevance of contributions, why they matter, what their potential implications will be, and under which assumptions.

Review — *Relevance*

Please take note of the following while evaluating relevance to Software Engineering.

- **Take the perspective of the targeted stakeholder**: How would this advance our knowledge? How could this impact my work? Under which assumptions?
- **Do assess** technical contributions **in light of all involved costs and risks**. Weigh reported utility against required effort for setup and maintenance.
- **Assess** technical contributions **not only by** their **evaluation results,** but also by the **potential implications** of the underlying ideas. Consider pathways to deployment
- **We welcome insights** about the **practice of software engineering**.
- **Do** consider that impact can also result through **methodological contributions.**

Review — *Verifiability and Transparency*

The extent to which the paper includes sufficient information to understand how an innovation works; to understand how data was obtained, analyzed, and interpreted; and how the paper supports independent verification or replication of the paper's claimed contributions.

This aims to check whether the described research is *recoverable*. You should be able to understand most of the key details about how the authors conducted their work, how they made their invention possible, or how the research findings were inferred from the collected evidence. This is key for replication and meta-analysis of studies underpinned by the positivist or post-positivist approaches. For interpretivist works, it is also key for evaluating qualitative work. Focus your critiques on omissions of research process or innovation details that would significantly alter your judgement of the paper's validity, or the *credibility* of results for research that uses qualitative methods.

Review — *Verifiability and Transparency*

Because there are always more details a paper can describe about its methods:

- **Welcome tools and data** that are available and usable at reviewing time.
- If the **paper contains sufficient detail** then data is secondary
- Welcome work whose authors have made extra efforts to make it **replicable and verifiable.**
- **Avoid** penalizing a paper for not describing *every* detail, recognizing that some details are more important than others and space is limited.
- **Avoid** asking authors to write substantially new method details *unless* there is space to add those details within the length restrictions.
- Papers **cannot be rejected** just because their artifacts are not available, if a reasonable justification is given. (More on that in the Open Science Policies slides)

Review — *Presentation*

The extent to which the paper's quality of writing meets the high standards of ICSE, including clear descriptions, as well as adequate use of the English language, absence of major ambiguity, clearly readable figures and tables, and adherence to the formatting instructions provided below.

Papers also need to be clear and concise, and comprehensible to diverse audiences.

We recognize that not all authors are fluent English writers. But if the language issues make the paper not comprehensible, it is not yet ready for publication.

Review — *Presentation*

Please take note of the following while evaluating Presentation.

- **Welcome honest discussions** on the assumptions, limitations, and novelty
- **Avoid** penalizing a paper for having easily fixable spelling and grammar issues.
- **Avoid** penalizing a sufficiently clear paper because it could be clearer. All writing can be clearer in some way!
- **Avoid** penalizing a paper for not using all of the available page count. It is okay if a paper is short but significant!
- **Avoid** asking for more detail unless you are certain there is space; if there is not enough space, provide concrete suggestions for what to cut.
- **Avoid** penalizing a paper for not following a particular paper structure

Artifact Check

We will ask one reviewer per paper to perform a lightweight check on the enclosed/online artifact (if a paper has artifacts) or a justification why the artifacts are not shared.

Note! This is a lightweight check (not as deep as the one done by the artifact track) and aims at determining whether a paper falls in one of the following categories:

1. **Unsatisfactory**, e.g., the artifacts are unavailable while the authors declared their availability [OR] the authors explained why the artifacts are not available, but I do not find the explanation to be reasonable [OR] the artifacts do not contain what is declared in the submission form or the paper.
2. **Partially Satisfactory,** i.e., the artifacts partially contain what is declared in the submission form or the paper.
3. **Satisfactory**, i.e., the artifacts are in line with what is declared in the submission form or the paper [OR] the authors explained why the artifacts are not provided and I find the explanation to be reasonable.

and add a short comment.

Other (non-designated) reviewers are welcome to do their own check if they wish

Review – *Recommendation*

"Based on the criteria above, this paper should be published at ICSE."

Based on all of the previous criteria, decide how strongly you believe the paper should be accepted or rejected. Like in previous year, we allow for major revisions.

- Papers that reasonably meet all of the criteria should be *accepted* (though this does not imply that the paper is perfect).
- Papers that meet some of the criteria and can meet all of the criteria with a month's work (by a single person), should be given the opportunity for *revision.*
- Papers that fail to meet most of the criteria should be *rejected*.

Review – *Scores*

For scoring, we have the following scores:

- 5. **Strong accept -** award quality
- 4. **Accept** – should be accepted
- 3. **Weak accept** – may be accepted, but I will not fight for it
- 2. **Weak reject** – may be rejected, but I will not fight against it
- 1. **Reject** – should be rejected

An explicit "Accept" score is not required; it can also emerge in the discussion.

Review – *Scores*

Because each paper should be judged on its own:

- **Do not** recommend accepting a paper because it was the best in your set. It is possible that none of your papers sufficiently meet the criteria.
- **Do not** recommend rejecting a paper because it falls under some assumed quota.

There is no set quota: Your job is not to "find the best paper(s) in your pile**".** The PC chairs will devise a program for *however* many papers sufficiently meet the criteria, whether that is 50 or 300. Your job is to find **all** submissions worthy of archiving and sharing for the community to build upon – which may include none or all of your papers.

Review – *Expertise*

Additionally, we ask for your **expertise** on the paper's topic:

- **X.** I am an **expert** on this topic (know the related work well)
- **Y.** I am **knowledgeable** on this topic.
- **Z.** I am an **informed outsider**.

Note that X/Y/Z denotes your *expertise*, not your *confidence* in your judgment. If you lack confidence, *state this in a comment for your co-reviewers*, pointing out possible reasons. Your co-reviewers may clarify things for you – or chime in.

Your X/Y/Z expertise is not sent to authors with your review comments and scores.

Review – *Expertise*

It is not necessary that all reviewers be experts – it can be useful to have some non-expert reviews to evaluate a paper's accessibility to a general audience.

If *all* reviewers are non-experts, though, chances of finding a champion are low. Area chairs and PC chairs will assess the case and may assign extra reviewers.

In case of **interdisciplinary research**, it is common to have reviewers who do not cover all disciplines. Be sure to discuss with co-reviewers as soon as possible and let us know if additional expertise is needed.

Review — *Extras*

ICSE has a number of rules in place regarding

- Open Science Policies (Sharing Data)
- ACM Publication Policy on Research Involving Human Participants and Subjects
- Double-Anonymous Submissions
- Plagiarism
- Awards

Let's discuss each of these in detail.

Review — Open Science Policies

Authors are expected to *share data or justify if they do not*.

- **Welcome** significant tools and data sets.
- **Welcome** research with industry and users. Be aware of the respective challenges, and value the efforts made by authors to overcome these.
- **Respect** reasons for not sharing data such as confidentiality or privacy. Assessing credibility in qualitative research is facilitated by transparency into researcher's decisions and procedures for data collections and analysis.
- **Do** consult provided data sets and replication packages if you have questions. Authors go to great lengths preparing these, so show them you cared.

Review – *ACM Guidelines Human Participants and Subjects*

https://www.acm.org/publications/policies/research-involving-human-participants-and-subjects (effective since August 15, 2021)

All authors conducting research involving human participants and subjects must meet appropriate ethical and legal standards guiding such research.

Reviewers must flag papers in case they believe such standards are not met. Please use the #humanSubjectsIssue tag for this purpose

Review - *ACM Guidelines Human Participants and Subjects*

Criteria to be checked include, but are not limited to:

- minimization of potential harms, making sure any risks are justified by potential benefits
- protection for the privacy and right to self-determination of participants and subjects
- adhering to relevant institutional, local, national, and international regulations
- adhering to the principle of informed consent
- adhering to the principle of justice
- adherence with all other applicable ACM policies

Review — *Double-Anonymous Submissions*

ICSE 2026 uses double-anonymous (formerly known as double-blind) submissions

- **Do** focus on paper content rather than authors.
- **Do** assume that third-party work described by the authors comes from third parties.
- **Do not** actively attempt to guess author identities (e.g., by googling paper titles or key phrases).
- **Do not** reveal your identity as a reviewer. Do not "sign" reviews.
- When looking up links, **cloak your identity**: use "private browsing" and/or a VPN
- **Do not** discuss papers outside of the HotCRP channel devoted to the paper.
- **Do** report potential violations to the PC chairs.

Review — *Plagiarism*

If after reading a submission, you suspect that it has in some way plagiarized from some other source, do the following:

- Read the ACM guidelines on Plagiarism, Misrepresentation, and Falsification
- If you think there is a potential issue, **write the PC chairs to escalate the potential violation**, and share any information you have about the case.
- The chairs will investigate and decide as necessary prior to the acceptance notification deadline.

Review — *Awards*

Reviewers should recognize papers that **best illustrate the highest standards of Software Engineering research**. This includes papers that

- meet **all of the review criteria** in exemplary ways (e.g., research that was particularly well designed, executed, and communicated), or
- meet **specific review criteria** in exemplary ways (e.g., discoveries are particularly relevant or novel).

To nominate a paper for a distinguished paper award, reviewers can give a paper an **"Strong accept"** score (one notch above "Accept").

Up to 10% of accepted papers can get a distinguished paper award.

Review Balance

You have **eight weeks (cycle 1, accounts for ICSE travel) and seven weeks** (cycle 2) to complete your assigned reviews (unless some are assigned to you later in the process).

We expect you to do 50% of the reviews in the first 4 weeks (for cycle 1), 4 weeks (for cycle 2) so that area and PC chairs can manage their workload.

Add reminders to your to do list/calendar, one for each paper. Tick each off when you're done. Spread your reviews out to be a happier, more constructive evaluator :-)

The earlier you start, the better. **Let us know immediately if you see any difficulties.**

Review – *You are in Charge*

We selected **you** because of **your** expertise and **your** ability to write **high-quality reviews.**

- Write your review **personally** and in **your own words.**
- Identify the **decisive** factors that lead towards your score.
- [*for papers marked revision*] Identify concrete, checkable changes that the authors can accomplish to make you comfortable recommending an accept.

You **can** get **assistance** by PhD students and Postdocs in your group (assuming no conflicts) – and **merge** their reviews into yours. Still, you remain responsible.

[New] Usage of GenAI in Editing Review

- We would like to highlight a recent policy by IEEE released on March 2024.
- **IEEE's operations manual, section 8.2.1.C.6** (page 101 of this PDF: https://pspb.ieee.org/images/files/PSPB/opsmanual.pdf) states:
- "Information or content contained in or about a manuscript under review shall not be processed through a public platform (directly or indirectly) for AI generation of text for a review. Doing so is considered a breach of confidentiality because AI systems generally learn from any input."
- Thus, please **do not use any public Generative AI even for editing your reviews** as AI systems generally learn from any input.

8. Discussion Period