

## Peer Review

# Review of: "Active Learning with a Noisy Annotator"

Stamatis Karlos<sup>1</sup>

1. School of Science and Technology, Hellenic Open University, Greece

Dear Authors,

Your work presents a novel contribution to the field of active learning by introducing realistic conditions through the evaluation of model performance in the presence of noisy annotations. The proposed method is particularly tailored for low-budget scenarios, distinguishing it from the majority of published works in the existing literature. It aims to enhance feature space coverage to enable representative sampling across informative regions.

The experimental section is well-structured, covering image-based datasets and including a sufficient number of baseline methods and configurations. Furthermore, the inclusion of an open-source implementation adds credibility to the obtained results.

Below are some minor comments intended to improve the clarity and academic rigor of the manuscript:

- At the end of page 1, please clarify whether the model's performance is evaluated solely on the optimal subset  $Q^*$ , or on the union of the initial labeled set  $L$  and  $Q^*$ .
- Many figure captions are overly lengthy or lack sufficient detail. Captions should describe the visual content (image or plot) without serving as supplementary material. Theoretical explanations or formula derivations should be placed in the main text preceding the figures. Avoid referencing earlier sections or using overly simplistic legends, such as the one in the final figure.
- Subsections 2.2 and 2.3 contain further subdivisions that are not clearly justified. If emphasis is intended, consider integrating the content without additional headings to maintain consistency.
- While the plots are informative, it would be beneficial to include quantitative metrics. For example, in Figure 2, presenting average scores would enhance interpretability.
- The parameter `use_noise_dropout` is introduced without prior explanation. Additionally, the role of  $b$ , which equals the number of classes, should be clarified within the algorithm rather than later in the

text. Please specify whether this constraint is intended to ensure class balance (e.g., one sample per class) or if it serves as a heuristic.

- Footnotes should appear on the same page as their corresponding references, rather than at the end of the manuscript.
- Please revise the second and third bullet points on page 12, as they appear to be duplicates.
- The use of mean accuracy difference from random query selection is informative, but it does not convey the absolute performance of the models. Consider including this information either in the main text, within the plots, or in summary tables.
- Moreover, I would expect a statistical test for examining the significance of the performance gain by the proposed algorithm. A comparison also regarding the time response could be a good point for considering that perspective as well.
- Figure 4 includes a competitor in the legend that appears only in some cases. This inconsistency is also present in Figure 5. Please clarify whether this is intentional or an oversight.
- Although multiple scenarios are tested, the experimental settings are not always consistent. Aim to standardize configurations where possible and complement the plots with aggregated results in tabular format.
- Please elaborate on the challenges associated with applying your approach to tabular datasets. If the method is not applicable to such modalities, consider updating the title to reflect the specific domain (e.g., image-based datasets) to avoid ambiguity.

Overall, the scope of this work is valuable and merits publication, as it contributes meaningfully to the existing body of literature. However, greater attention should be given to the presentation of the results. Additionally, the conclusions drawn from the experiments should be more clearly articulated and, where possible, expressed with greater precision and conciseness.

## Declarations

**Potential competing interests:** No potential competing interests to declare.