

Reply to Anonymous Referee #3

July 31, 2025

Dear Reviewer,

Thank you very much for reviewing our manuscript. We are very grateful for the extremely helpful and constructive comments. In the following, we provide point-by-point replies to the points raised in your report. We have marked the original text of the review in blue colour and our response in black colour.

The manuscript "In-Line Holographic Droplet Imaging: Accelerated Classification with Convolutional Neural Networks and Quantitative Experimental Validation" by Thiede et al shows a very interesting new technique to improve assessment of holographic instruments and improvement of data quality. I enjoyed reading this manuscript and suggest minor revisions.

We appreciate the reviewer's positive and encouraging feedback and are glad to hear that the manuscript was enjoyable to read.

(C1): I believe the manuscript could be more concise in several areas when well-known topics are being discussed, even though they are presented nicely and thoroughly here. It might help to give focus on the actual new results.

(A1): We thank the reviewer for the suggestion to improve conciseness, particularly in sections discussing well-established concepts. We were already mindful of the overall length when preparing the original manuscript and tried to include only what we considered necessary. We revisited the manuscript again and removed the detailed description of the reconstruction methods (lines 134 to 149 in original manuscript), as a citation of Fugal 2009, where it is described in great detail, seems indeed sufficient. We believe, other sections that do not present new results, still provide important context and justification for our approach and have thus decided to keep them in the revised manuscript. This includes e.g. the overview of established verification method as this demonstrates the need for a tool like CloudTarget and the complete overview of our processing steps for transparency and reproducibility. We hope the reviewer can see our efforts to improve conciseness and agrees that the remaining content adds value in terms of clarity and motivation.

(C2): In table 2 it is hard to see which line the notes belong to, maybe separating them would make it clearer.

(A2): We have added additional vertical spacing to separate the notes more clearly.

(C3): in line 322 you say 3 or 4 - when is it which? under which circumstances is it which?

(A3): We have changed this to three as we start to see a slight decrease in recall when using three photomasks, which becomes more significant when using four.

(C4): same in line 385: is it 1 or 2?

(A4): The labeling procedure varied between datasets and was either conducted by one operator or two operators to enable inter-comparison. For each dataset the number of operators is indicated in Table 2 and we have made that clearer now by adding "(as indicated in Table 2)" to this line in the revised manuscript in line 384.

(C5): typos:

Line 148 typo - -

Line 256 typo an

Line 399 typo: filtering

Line 621: space missing

(A5): We thank the reviewer for pointing out the minor issues related to typos. These have been corrected in the revised manuscript.

We provide an additional version of the revised manuscript in which all changes are clearly marked, including those made in response to comments from the other reviewers.

Additionally, lines 141–149, 575, and 597–600 were removed, as they referred to a low-pass filter applied during reconstruction that is not used in our process and was incorrectly mentioned. This has now been clarified in line 137 of the revised manuscript, where Fugal (2009) is cited to describe the reconstruction process and explicitly stated that the method is applied without frequency low-pass filtering. The reference Paliwal 2025 in the list of references was corrected.