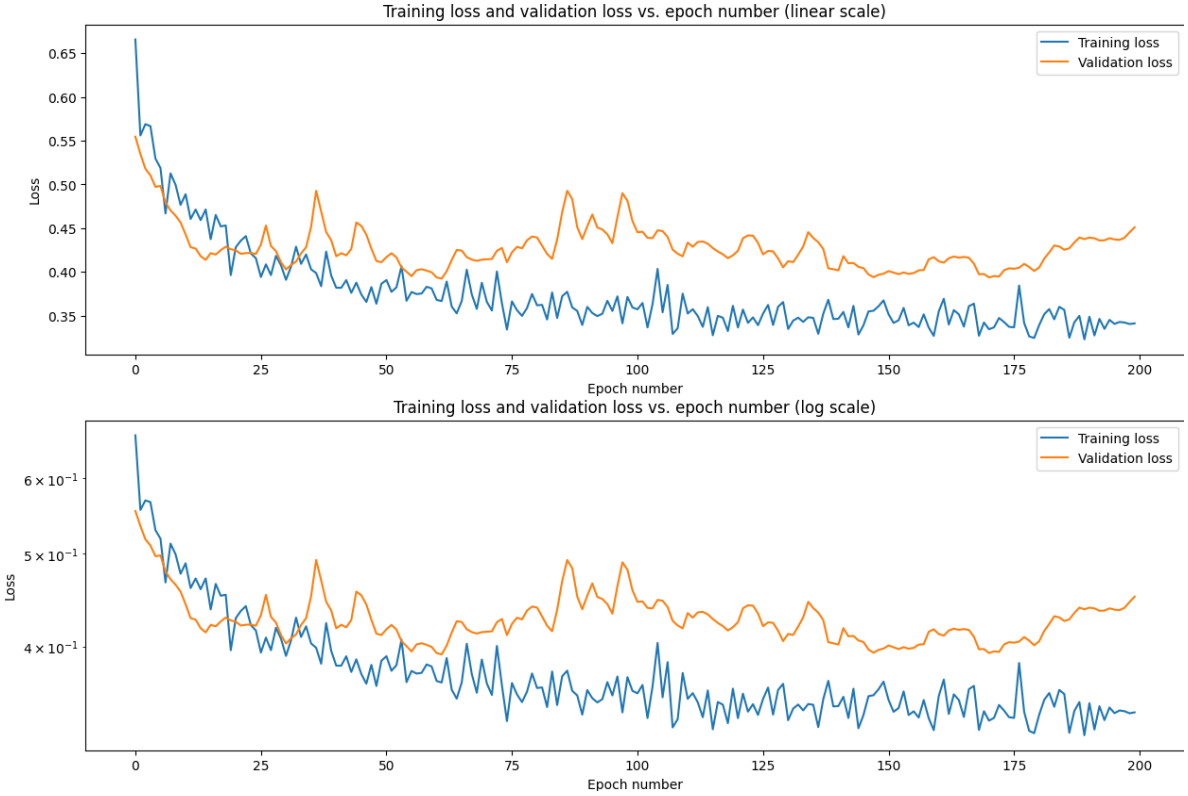
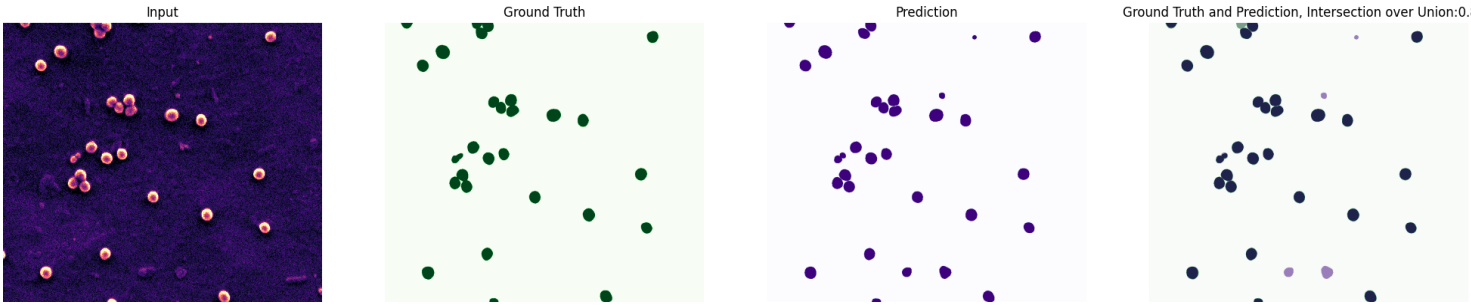
**Quality Control report for Stardist 2D model**
**(My_Stardist_Model_Fine_Tuned_pretrained_fluo_v3)**
**Date: 2023-11-27**

## Development of Training Losses




## Example Quality Control Visualisation




## Quality Control Metrics

| image # | Prediction v. GT IoU | false pos. | true pos. | false neg. | precision | recall | accuracy | f1 score | n_true | n_pred | mean_true_score | mean_matched_score | panoptic_quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.851 | 5 | 27 | 1 | 0.844 | 0.964 | 0.818 | 0.9 | 28 | 32 | 0.892 | 0.925 | 0.832 |
| 2 | 0.861 | 7 | 23 | 0 | 0.767 | 1.0 | 0.767 | 0.868 | 23 | 30 | 0.935 | 0.935 | 0.811 |
| 3 | 0.872 | 3 | 14 | 1 | 0.824 | 0.933 | 0.778 | 0.875 | 15 | 17 | 0.881 | 0.944 | 0.826 |
| 4 | 0.876 | 1 | 10 | 1 | 0.909 | 0.909 | 0.833 | 0.909 | 11 | 11 | 0.874 | 0.962 | 0.874 |
| 5 | 0.942 | 0 | 7 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 7 | 7 | 0.937 | 0.937 | 0.937 |
| 6 | 0.811 | 2 | 5 | 0 | 0.714 | 1.0 | 0.714 | 0.833 | 5 | 7 | 0.943 | 0.943 | 0.786 |
| 7 | 0.665 | 6 | 13 | 2 | 0.684 | 0.867 | 0.619 | 0.765 | 15 | 19 | 0.797 | 0.92 | 0.704 |

| image # | Prediction v. GT IoU | false pos. | true pos. | false neg. | precision | recall | accuracy | f1 score | n_true | n_pred | mean_true_score | mean_matched_score | panoptic_quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 0.587 | 4 | 17 | 7 | 0.81 | 0.708 | 0.607 | 0.756 | 24 | 21 | 0.639 | 0.902 | 0.682 |
| 9 | 0.641 | 7 | 22 | 5 | 0.759 | 0.815 | 0.647 | 0.786 | 27 | 29 | 0.762 | 0.935 | 0.735 |
| 10 | 0.687 | 6 | 21 | 5 | 0.778 | 0.808 | 0.656 | 0.792 | 26 | 27 | 0.725 | 0.898 | 0.711 |
| 11 | 0.481 | 29 | 31 | 6 | 0.517 | 0.838 | 0.47 | 0.639 | 37 | 60 | 0.753 | 0.899 | 0.575 |
| 12 | 0.541 | 25 | 39 | 10 | 0.609 | 0.796 | 0.527 | 0.69 | 49 | 64 | 0.708 | 0.889 | 0.614 |
| 13 | 0.675 | 8 | 34 | 10 | 0.81 | 0.773 | 0.654 | 0.791 | 44 | 42 | 0.702 | 0.909 | 0.719 |
| 14 | 0.862 | 3 | 34 | 3 | 0.919 | 0.919 | 0.85 | 0.919 | 37 | 37 | 0.83 | 0.903 | 0.83 |
| 15 | 0.605 | 18 | 46 | 13 | 0.719 | 0.78 | 0.597 | 0.748 | 59 | 64 | 0.695 | 0.892 | 0.667 |

References:

- ZeroCostDL4Mic: von Chamier, Lucas & Laine, Romain, et al. "Democratising deep learning for microscopy with ZeroCostDL4Mic." Nature Communications (2021).

- StarDist 2D: Schmidt, Uwe, et al. "Cell detection with star-convex polygons." International Conference on Medical Image Computing and Computer-Assisted Intervention. Springer, Cham, 2018.

**To find the parameters and other information about how this model was trained, go to the training_report.pdf of this model which should be in the folder of the same name.**