

Training report for StarDist 2D model (StarDist_Cont_Grey_4_200_128_2_0.0003_Aug2_150train)

Date: 2024-11-09

Training time: 0.0hour(s) 13.0min(s) 33sec(s)

Information for your materials and method:

The StarDist 2D model was trained for 150 epochs on 36 paired image patches (image dimensions: (1037, 228), patch size: (128,128)) with a batch size of 4 and a mae loss function, using the StarDist 2D ZeroCostDL4Mic notebook (v 1.20.2) (von Chamier & Laine et al., 2021). The model was retrained from a pretrained model. Key python packages used include tensorflow (v 2.17.0), csbdeep (v 0.8.1), cuda (v 12.2.140

Build cuda_12.2.r12.2/compiler.33191640_0). The training was accelerated using a Tesla T4 GPU.

Augmentation: The dataset was augmented by a factor of 4

Parameters

The following parameters were used for training:

Parameter	Value
number_of_epochs	150
patch_size	128x128
batch_size	4
number_of_steps	200
percentage_validation	10
n_rays	32
grid_parameter	2
initial_learning_rate	0.0003

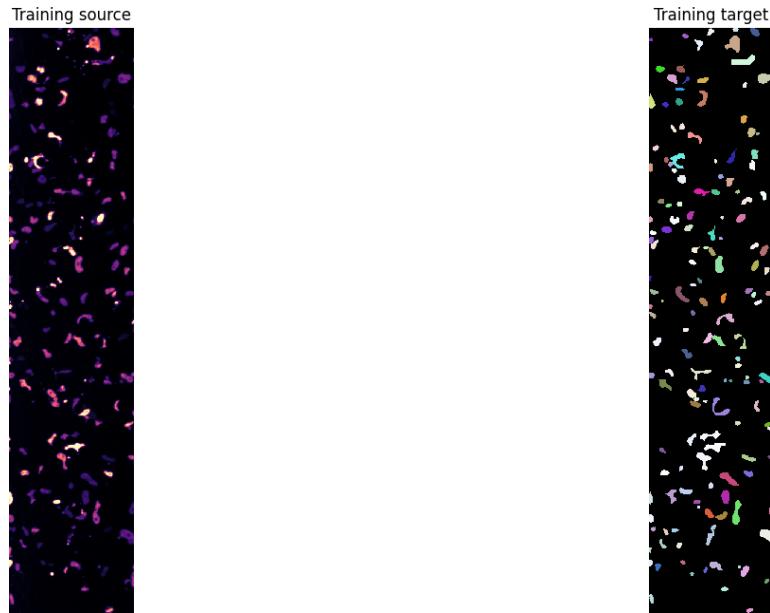
Training Dataset

Training_source: /content/gdrive/MyDrive/Lammerding_Lab/Training Set/Grey

Training_target: /content/gdrive/MyDrive/Lammerding_Lab/Training Set/ROI

Model Path: /content/gdrive/MyDrive/Lammerding_Lab/StarDist_model/StarDist_Cont_Grey_4_200_128_2_0.0003_Aug2_150train

Example Training pair



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.
- Augmentor: Bloice, Marcus D., Christof Stocker, and Andreas Holzinger. "Augmentor: an image augmentation library for machine learning." arXiv preprint arXiv:1708.04680 (2017).

Important:

Remember to perform the quality control step on all newly trained models

Please consider depositing your training dataset on Zenodo