Training report for StarDist 2D model (new_model_2)
Date: 2023-01-18
Training time: 0.0hour(s) 49.0min(s) 44sec(s)

Information for your materials and method:

The StarDist 2D model was trained for 200 epochs on 5 paired image patches (image dimensions: (471, 496), patch size: (256,256)) with a batch size of 4 and a mae loss function, using the StarDist 2D ZeroCostDL4Mic notebook (v 1) (von Chamier & Laine et al., 2020). The model was retrained from a pretrained model. Key python packages used include tensorflow (v 2.9.2), Keras (v reprocessing==1.1.2), csbdeep (v 0.7.2), numpy (v 1.21.6), cuda (v 11.2.152 Build cuda_11.2.r11.2/compiler.29618528_0). The training was accelerated using a Tesla T4 GPU.

Augmentation: The dataset was augmented by a factor of 5

Parameters

The following parameters were used for training:

| Parameter	Value
number_of_epochs	200
patch_size	256x256
batch_size	4
number_of_steps	120
percentage_validation	10
n_rays	64
grid_parameter	2
initial_learning_rate	0.0003

Training Dataset

Training_source: /content/gdrive/MyDrive/DeepBac/Train_20230118/source
Training_target: /content/gdrive/MyDrive/DeepBac/Train_20230118/target

Model Path: /content/gdrive/MyDrive/DeepBac/Train_20230118/new_model_2

Example Training pair
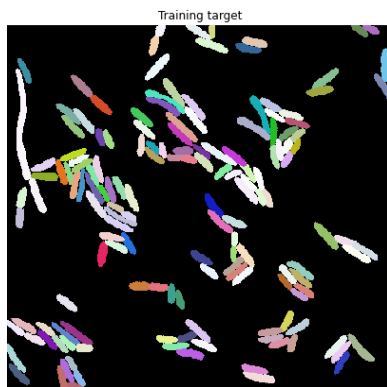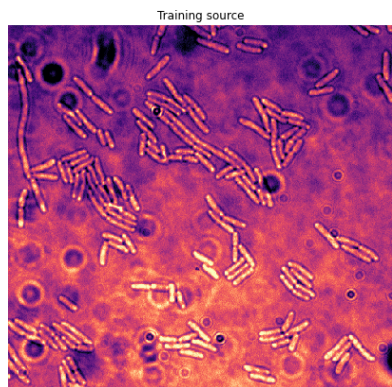
References:

 - 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