Folder contents.

We provide all the test data and corresponding predictions for our paper, “Practical Fluorescence Reconstruction Microscopy for Large Samples”. Please refer to the Methods section in this paper for experimental details.

For each experimental condition, we provide the input transmitted-light images (either phase contrast or DIC), the ground truth fluorescence images, and the output predicted fluorescence images which should reconstruct the ground truth fluorescence images. Folder are organized by cell type (e.g. MDCK) and imaging magnification (e.g. 20x). For example: “MDCK_20x”.

Within the main folders, you can find a folder named “input_images” containing the transmitted-light images (phase or DIC) for the experiment. Certain experiments have one or a number of fluorescent output images associated with the same input images. For example, the MDCK 20x experiment associates input phase contrast images with DAPI nuclei images as well as RFP E-cadherin images. The raw ground truth fluorescence images are found in the sub-folder called “output_gt_images”.

The reconstructed U-Net output images are contained in sub-folders named according to how the network was trained. The sub-folders are named as: “[fluorescent channel/feature]_[loss function used during training]_[standard U-Net (1unet) or 2-stack U-Net (2unet) indicator]”. For example, In the MDCK 5x experiment, we can find predicted images of DAPI nuclei for a standard U-Net trained either with a mean-squared error (MSE) training loss, “DAPI_mse_1unet”, or with a Pearson’s coefficient based training loss, “DAPI_pearson_1unet”.