How To Segment and Count Cell Number and Area

Download images to Segmentation/raw\_data

Activate environment: /proj/berzelius-2021-21/users/Salma-files/envs/UNET\_TF\_1/

1. **Submit extract and conversion script to extract nuclei channel from tar files**

Go to Segmentation/scripts, vim 20230223\_extractionConversion\_KE.py and change plate number (in path)

vim extract\_conversion.sh and change name of logfile to plate number

To submit job: sbatch extract\_conversion

To see if job is running: squeue -u username, R:running or PD:pending.

Write down the job number so you can find the right slurm file if error and multiple runs. Output will be in raw\_data as unzipped directory (now only named platenumber, not platenumber.tar.gz)

1. **Run bfconvert command to finish the conversion to .png**

When in the folder of the images: ls \*.png | while read file; do convert $file -auto-level -depth 8 -define quantum:format=unsigned -type grayscale $file; done

1. **Submit prediction**

In /data directory, make a directory for your current plate: mkdir M…PlateName. Copy only png images from raw\_data to the data directory: cp \*.png ../../data/”plateName”. Check how many images are in the directory to make sure that you copied correctly: ls | wc -l.

Make a list of image names and add it to the 4\_filelists directory. In the data/plate directory: ls \*png > “M….plate”\_names.txt. Move the list of names from directory fo the images with: mv “\_names.txt” ../../data/4\_filelists. Go to 4\_filelists to see if the list it there.

Make a new directory for your current plate in plate\_script and cp 03-prediction.py, area\_and\_count.py, area\_and\_count.sh, config.py, model\_14.hdf5, \_\_pycache\_\_, run\_prediction.sh, utils, there.

Change 3 things in 03-pred: experiment name, with open, load weights

In 03 make sure that range x batch = number of images

Add lines in config file to images and to image names

Remove experiments before +tag in dirtools output dirs. Not files

1. **Submit evaluation script**

count\_and\_area.sh, count\_and\_area.py in .sh script