DeepCellMap files overview

Notebooks

`DeepCellMap_1_image_preprocessing.ipynb` Preprocess: downscaling, tissue extraction, tiling (ihc+fluo)

`DeepCellMap_2_laboratory_Tissue_segmentation.ipynb` Functions to test different segmentation param to segment **tissues** (ihc+fluo)

`DeepCellMap_3_laboratory_Cell_segmentation.ipynb` Functions to test different segmentation param to segment **cells** (ihc+fluo)

`DeepCellMap_4_cell_classification.ipynb` Cells detection and classification + visualisation classification (ihc+fluo)

`DeepCellMap_5_fluo_cellpose_region_segmention.ipynb` Use Cellpose to segment nuclei to generate masks of the anatomical regions (fluo)

`DeepCellMap_6_roi_definition.ipynb` Roi definition and application of DeepCellMap (ihc+fluo)

`DeepCellMap_7_fluo_statistics_visualisation.ipynb` Statistical results (ihc+fluo)

`DeepCellMap.ipynb` Apply all DeepCellMap on a new image (ihc+fluo) *can be duplicated to process several images in parallel*

Remark : Notebook 5 is optional and can be used when an anatomical region segmentation wants to be performed

Python files

`region_of_interest.py` Definie la classe centrale RegionOfInterest utilisé tout au long du pipeline.

config

`base_config.py` Classe de base d'un fichier de configuration : methodes generales

`dataset_config.py` Classe de base d'un fichier de config lié a un dataset

`dataset_management.py` Classe qui gere en fonction d'un nom de dataset le dataset utilisé

`dataset_cancer_config.py` Contient toutes les configurations du dataset Cancer

`dataset_covid_config.py` Contient toutes les configurations du dataset Cancer

`dataset_ihc_microglia_config.py` Contient toutes les configurations du dataset Cancer

`html_generation_config.py` Configurations sur la génération du fichier html de visualisation des images d'un dataset

preprocessing

`slide.py` Fonctions liés à la manipulation des images bruts (ihc+fluo)

`filter.py` Tous les filtres appliqués aux images (ihc+fluo)

`tiles.py` Fonctions liés à la manipulation des tiles (ihc+fluo)

segmentation_classification

`segmentation.py` All functions about segmentation of cells (ihc+fluo)

`classification.py` All functions about cells classification (ihc)

`train_classification_model.py` All functions about DL training (ihc)

`training_set_constitution.py` All functions about training set constitution (ihc)

stat_analysis

`colocalisation_analysis.py` All functions to apply colocalisation analysis (ihc+fluo)

`dbscan_analysis.py` All functions to apply dbscan-based spatial statistical analysis (ihc+fluo)

`neighbors_analysis.py` All functions to apply neighbors-based spatial statistical analysis (ihc+fluo)

`deep_cell_ma.py` All external functions to apply and merge results from different spatial (ihc+fluo) statistical analysis on ROIs

utils

`util.py` All utilitaires functions

`display_statistics.py` All functions about displaying statistics

`util_cellpose.py` All cellpose utilitaires functions

`util_colors_drawing.py` All functions about colors and drawings

`util_fig_display.py` All functions about displaying images

`util_html.py` All functions related to html generation to visualise summaries of the images