UGM Yogyakarta OMERO Workshop

Summary

Day 1
Imaging workflows in OMERO:
9.30 - 11.00
Import into OMERO
- Cover the various import options
11.15 - 12.45
OMERO core concepts
- Data management - Metadata, Users and groups
- Viewer -iviewer - concentrate on ROIs
- Search
13.45 - 15.15
OMERO figure
- How to use figure
15.30 - 17.00
- Usage of OMERO for teaching - basic setup
- Using OMERO with QuPath - pathologist use case
End of Day 1

Day 2
Analysis of Images in OMERO using Machine Learning and Deep Learning Software Packages.
9.30 - 10.30
Analysis with 3rd party tools - principles
- Analysis with Fiji: manual
- Analysis with Fiji: scripting
- Data mining using OMERO.parade (Project/Dataset/Image)
10.45 - 12.15
Image data resource (IDR) - source of image data using OMERO API
Analysis environments & OMERO - case of Machine Learning tools:
- CellPose
- StarDist
End of Day 2
Content

Import

In this section we will cover the various import options such as the import with or without data transfer and synchronous vs. asynchronous.

Desktop client install and import


Command line import, bulk import, in-place import

These import sections not covered in the workshop can be found at https://omero-guides.readthedocs.io/en/latest/upload/docs/import.html

OMERO core concepts

Data management and cooperation


Viewing images (OMERO.iviewer)


Annotate data and filter using annotations


Search


OMERO figure

Fast creation of publication figures using OMERO.figure

See https://omero-guides.readthedocs.io/en/latest/figure/docs/omero_figure.html
Analysis

This part constitutes the core of the training and we will explore the different means OME provides to interact with image and non-image data and how to best integrate these into your workflows.

Analysis with Fiji

- Analysis with Fiji: Java
  - Fiji client side: manual Analysis via UI
  - Fiji client side: scripting: Groovy and Macro
  - Fiji: Analysis in the cloud: Java and Macro

For setup of the Fiji plugin see
For the walkthrough in this workshop, see Fiji chapters

OMERO parade

Data mining using OMERO.parade on Projects and Plates

Analysis with CellPose

For the basic setup for CellPose, either
- (easier, environment will be set up on the cloud) Click on the Google Colab badge in
  or
- (more rewarding, local setup) Follow the instructions in

Analysis with StarDist

For the basic setup for StarDist, either
- (more rewarding, local setup) Follow the instructions in