

Combining the powers of ImageJ and OMERO

ImageJ2 [1] is a new version of ImageJ for the next generation of scientific image data. Internally, it is a total redesign of ImageJ, but it is backwards compatible with ImageJ 1.x via a "legacy layer" including complete integration with the existing ImageJ user interface, as well as extensible support for new user interfaces. ImageJ2 has an N-dimensional data model driven by the powerful ImgLib2 library [2], which supports image data expressed in an extensible set of numeric and non-numeric types, and accessed from an extensible set of data sources.

The ImageJ2 vision is to extend Java's mantra of "write once, run anywhere" to image processing algorithms. With that goal at its heart, ImageJ2 introduces extensible plugin and module frameworks [3] which make ImageJ commands richer, more powerful and easier to share across applications. ImageJ2 completely isolates the image processing logic from the graphical user interface (UI), allowing ImageJ2 modules to be used in many contexts; already, these modules are accessible from several software platforms including CellProfiler [4], KNIME [5], Alida [6] and OMERO.

This poster describes the basics of ImageJ's module framework while highlighting the integration of these modules from within OMERO on the server side. It also describes use of ImageJ as an OMERO client, including accessing and processing image data from an OMERO server.

ImageJ is developed in close collaboration with related projects including Fiji [7], ImgLib2, SCIFIO [8] and OME, and strives to deliver a coherent software stack reusable throughout the life sciences community and beyond, so that scientists can truly "write once, run anywhere" and share with the world. For further details, see the SciJava web site: <http://scijava.org/>

[1] <http://developer.imagej.net/>

[2] <http://imglib2.net/>

[3] <http://github.com/scijava/scijava-common>

[4] <http://cellprofiler.org/>

[5] <http://tech.knime.org/community/image-processing>

[6] <http://www2.informatik.uni-halle.de/agprbio/alida>

[7] <http://fiji.sc/>

[8] <http://scif.io/>