AI-assisted Image Analysis and Scalable Data Processing for Life Sciences: Boost your research with the ZEISS arivis scientific software platform

M. McQuilken[1]

[1] ZEISS Microscopy.

Abstract

The integrated ZEISS arivis software platform supports AI-assisted analysis pipelines and scalable processing for 2D & 3D/4D widefield, confocal, super resolution, light sheet and volume electron microscopy with vendor-agnostic file import. Machine Learning & Deep Learning training and segmentation are supported locally and in the cloud, based on the well-established APEER AI technology. Scalable from notebook and graphics workstation to server infrastructure, from single lab to multi-user core facility, and optionally with a fully compatible, immersive and productive VR environment. ZEISS arivis complements the ZEISS ZEN imaging suite with state-of-the-art visualization and analysis, while at the same time being able to import a multitude of imaging file formats. Your scientific success is our goal: get reliable results from your precious imaging data, faster and more efficient than ever before. Become more productive in your analysis tasks, run analysis pipelines and assays on your local servers, and benefit from the various export options. The ZEISS arivis platform can connect with and integrate a multitude of commercial and open-source programs such as MATLAB and the Python-based projects Stardist and Cellpose.

The workshop will demonstrate analysis workflows with real-world academic case studies from various imaging modalities and microscopy techniques.

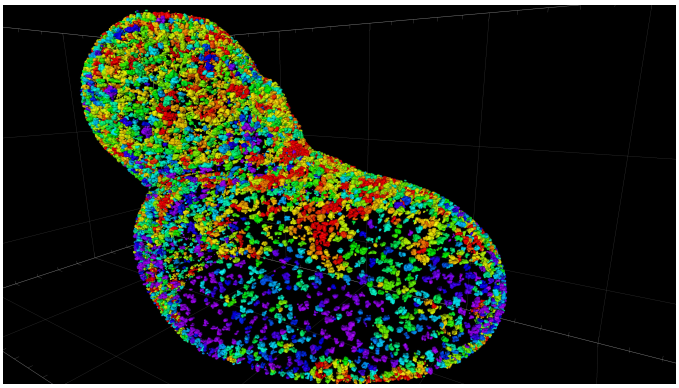


Image description:

Nuclear pore density analysis of HeLa cell volume EM imaging, provided by Yannick Schwab, EMBL. For each nuclear pore object, the average distance to the nearest 8 other nuclear pore objects was measured. Color-coding these objects according to this average distance to the nearest 8 objects was used to represent the density of pores across the nuclear membrane.