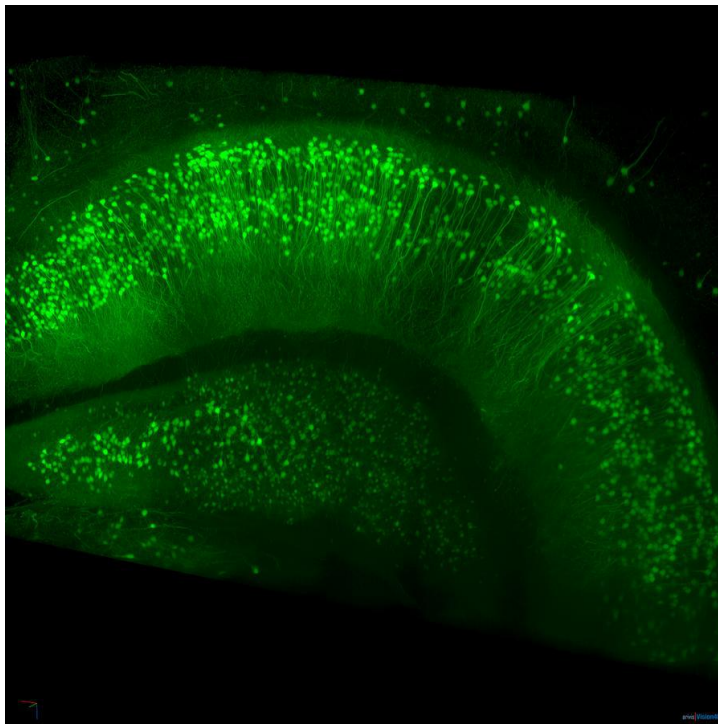


## Fast and unlimited: Visualize, analyze and share microscopic image data without limitations

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New imaging techniques hold many opportunities but also pose various challenges to those involved. And as optical engineers, biologists or data analysis specialists learn how to make use of, or even extend functions of novel hardware systems, also new scientific methods evolve rapidly. For instance, in the field of neuroscience one of the latest examples might be the development of tissue-clearing techniques imaged by state-of-the art SPIM and Light Sheet microscopes. This combination of methods allows high-resolution imaging of whole organisms and organs in a relatively short period of time. The data sets produced by these new techniques are often extremely large and can't be visualized and analyzed by standard software or without using very powerful and expensive computers. In our presentation at the EUBIAS we will show how arivis enables researchers to face these problems. We highlight on the arivis Vision approach to handle and analyze data sets of almost unlimited size, even on standard desktop PCs. We demonstrate the typical workflow when dealing with data sets of several hundreds of Gigabyte up to Terabyte of size. This involves the import and stitching of single stacks to one large volume, the fast and impressive 3D/4D-visualization techniques, image analysis in arivis Vision 4D and the arivis Vision solution to present and share image data and analysis results in a web based approach.



*Thy1-EGFP M-line mouse hippocampus, optically cleared in LUMOS clearing agent. Sample was kindly prepared and provided by O.Efimova National Research Center "Kurchatov Institute", Moscow, Russia; Imaged on a ZEISS Lightsheet Z.1 modified for cleared specimen. Imaging Parameters: ZEISS 20x/1.0 immersion lens for RI=1.45 (WD= 5.6 mm); Voxel Size: (x:y:z) 285 x 285 237 nm; Volume Size: 4.12 x 0.466 x 2.11 mm (14755 x 1636 pixel and 8882 z-sections); The data set was acquired from a hemisphere whole mount. Processing and rendering in arivis Vision4D.*