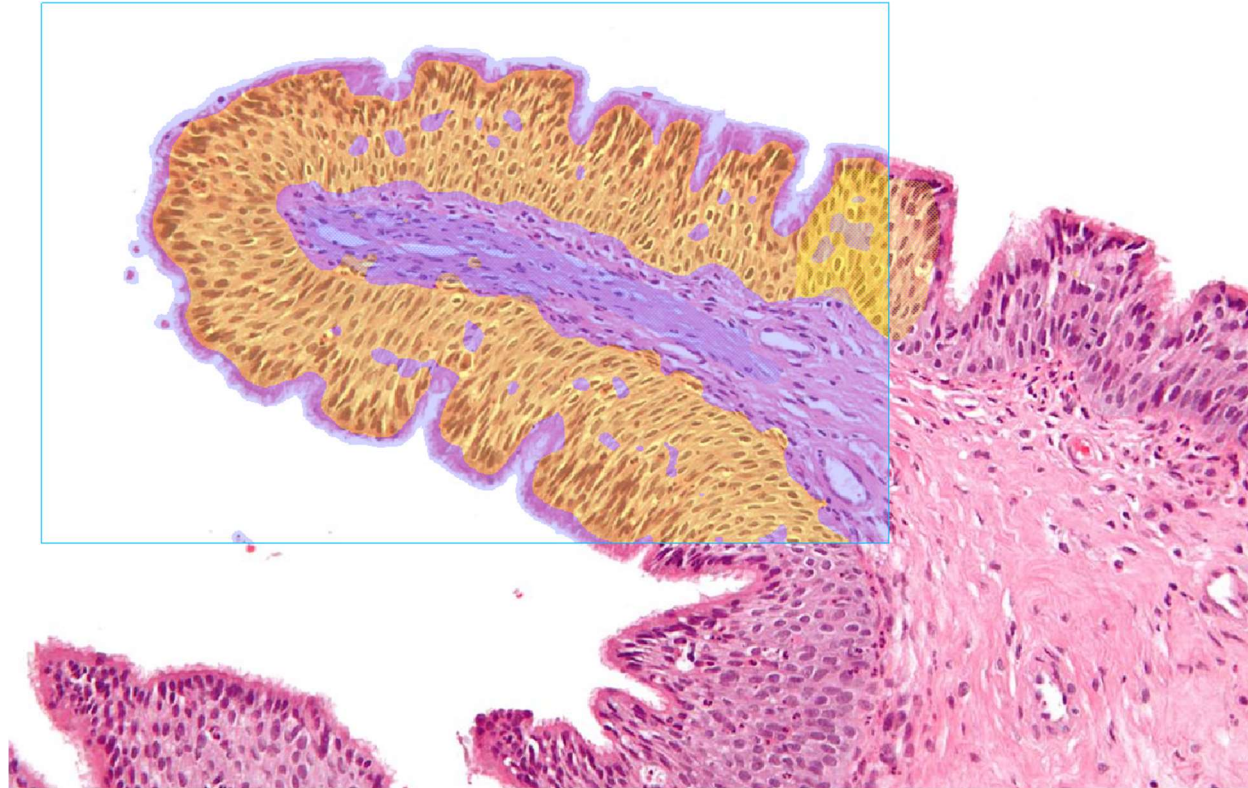


DRVISION TECHNOLOGIES

AIVIA 7.5

May 8th, 2018, Bellevue, WA, USA



OVERVIEW

DRVISION is bringing a renewed focus to machine learning classification and real-time terabyte volume rendering, plus a raft of performance and technology improvements, with the launch of Aivia 7.5. Pixel Classifier extends our machine learning classification technology to the realm of image enhancement. Using the intuitive paintbrush tool, draw a few examples of the features of interest on the image; the Pixel Classifier takes your input and enhances selected features to enable automated image analysis. In Aivia 7.5, we are also launching a public beta of Live Import that renders 3D volumes in real-time directly from your acquisition microscope. Live Import generates the multi-block Aivia TIFF file on-the-fly to let you visualize and interact with the data in 3D as it is being acquired – a major improvement. Finally, Aivia 7.5 extends the key technologies in Aivia 7 to provide additional quality-of-life improvements that are highly sought-out by our customers – Mesh Editor for splitting 3D surfaces; measurement selection for the Object Classifier Tool; more accurate EM segmentation using 3D deep learning model; and many more.

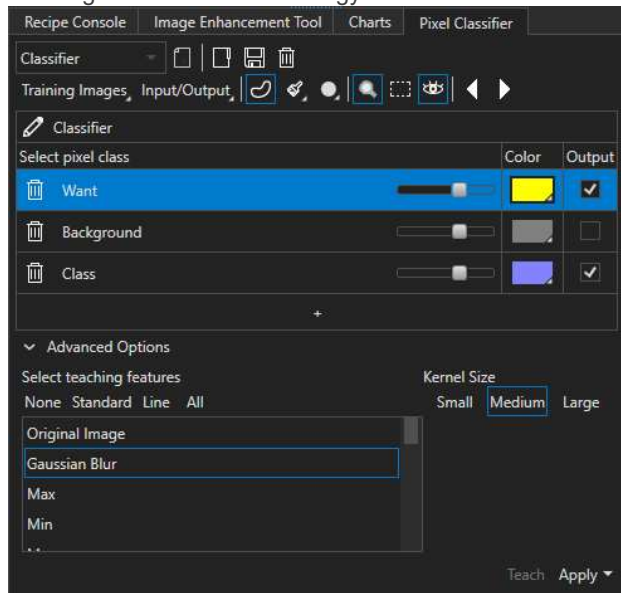
Summary of Aivia 7.5 developments:

- *Pixel Classifier* – 30 new features
- *Live Import* – 17 new features

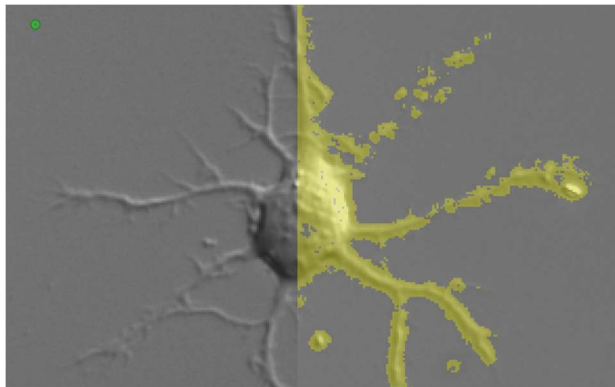
- *Mesh Editor* – 10 new features
- Virtual Reality (VR) improvements – 6 new features
- General Aivia improvements – 8 new features
- 117 bugs fixed

Pixel Classifier

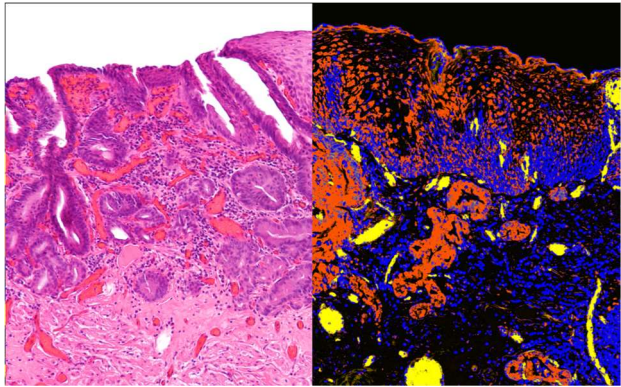
- Brand new tool for image enhancement using machine learning classification technology
- Intuitive paintbrush, eraser and fill tools let you define areas of interest directly on the image by drawing
- Teaching happens in 2D view and can be extended to additional Z-planes for 3D datasets.
- Live preview of teaching output with optional ROI display for faster preview performance during teaching
- Creates probability map by assigning an intensity value to each classified pixel, based on several user-selectable feature parameters; probability map is output to a new channel, allowing you access to Aivia's suite of automatic image analysis pipelines and manual editing tools
- Advanced options for selecting additional features and specifying processing kernel size for classification of multi-scale features on image
- Save and load pixel classifier for use in other images



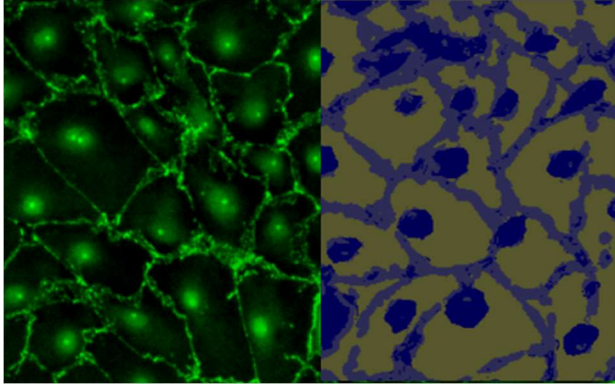
- Sample results (original on left, pixel classifier output on right)



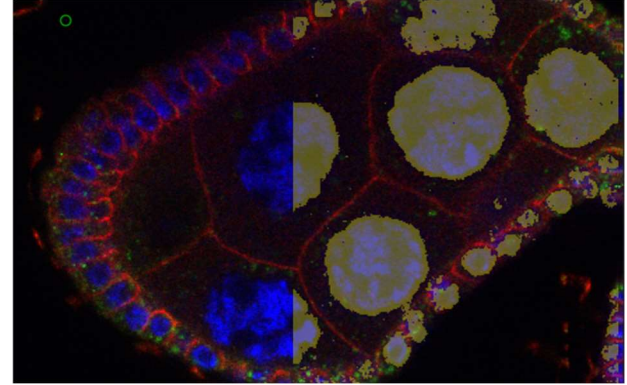
DIC image (neuron)



Pathology



2D Fluorescence (gap junction)



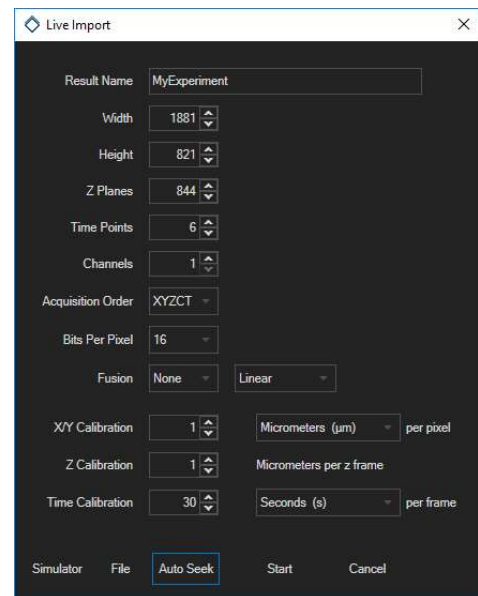
3D Confocal (nuclei)

Live Import (public beta)

- Visualize image data in 3D directly from the acquisition microscope as the data is being generated
- Acquired images are converted automatically to Aivia's high performance Aivia TIFF format for optimal visualization and interaction experience
- Select an acquisition folder and specify the acquisition parameters to start; Aivia automatically populates the display as new images are being acquired

Virtual Reality improvements

- Left hand grip button toggles clipping plane for 3D surfaces
- Right hand grip button regroups 3D scene and enables object binding to prevent separation of surfaces and volumes
- Grab tracks and anchors in addition to regular 3D object surfaces
- Improved support for playback of 3D+time sequences



Additional features and improvements

- 3D EM Analysis recipe now has an option to use 3D convolution kernel for Deep Learning segmentation which provides greater detection accuracy
- Object Classification Tool allows you to specify the measurements (including select advanced measurements) to use for the classifier
- Direct segmentation mode for Cell Proliferation recipe lets you take pixel classifier output to segment whole regions (e.g. tissues) for additional analyses.
- We have fixed 117 bugs to make Aivia more stable and user-friendly (less workarounds needed).

Demo license and testing

Download Aivia from <https://www.drivetechnologies.com/demo> – it includes all the features listed above plus all the functionality previously introduced. See more details here <https://www.drivetechnologies.com/aivia>.

Resources

Video tutorials - <https://www.drivetechnologies.com/tutorials> and via our YouTube channel, <https://www.youtube.com/channel/UCSZnnDkQItndrBfCmfkxyfw>

How to tutorials (text) – scroll to the “How To Guides” section on the tutorials page: <https://www.drivetechnologies.com/tutorials>

Sample data sets – under the heading of each recipe in the “Recipe Tutorials” sections in the Aivia Wiki homepage: <https://aivia.wikispaces.com>

Aivia Wiki (reference manual) - <https://aivia.wikispaces.com/>

Get Aivia for your lab

Please contact us (quyent@drivetechnologies.com) for pricing and licensing options.