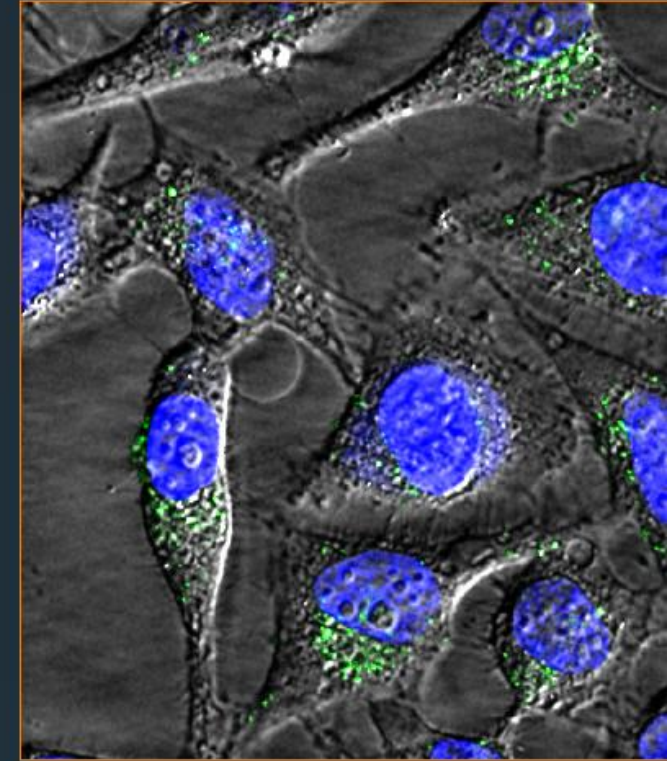
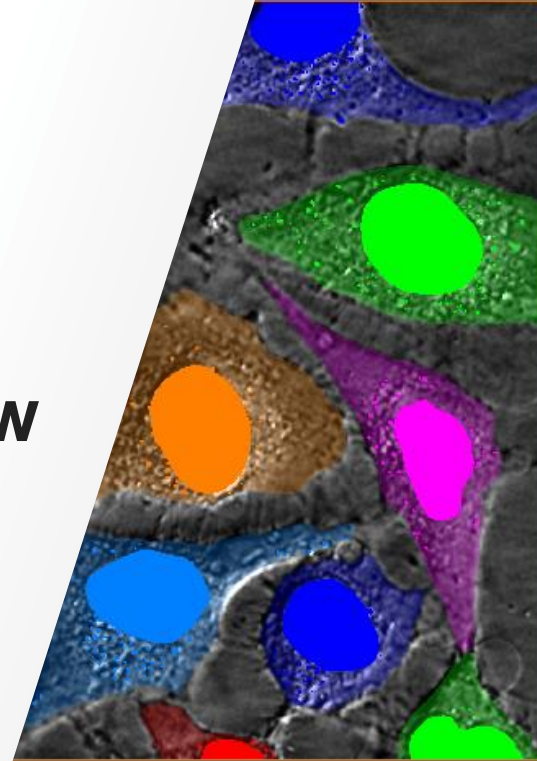


DIC Image Segmentation Workflow

2021



 The world leader in serving science

Segment cell regions using Deep Learning model



Multi-Channel-Field.am

Demo_2D_3C_oir_Channel0

Demo_2D_3C_oir_Channel1

Demo_2D_3C_oir_Channel2

Deep Learning Prediction

Demo_2D_3C_oir_Channel2.predict

Ortho Slice

Color Wash

Properties

Deep Learning Prediction

Data: Demo_2D_3C_oir_Channel2

Model

Architecture: _2021_DL-files/TrainedModelDIC.json

Weights: _2021_DL-files/TrainedModelDIC.hdf5

Information: Complete model information inside the custom model.py file

Tiling: Automatic

Custom Processing: ☒

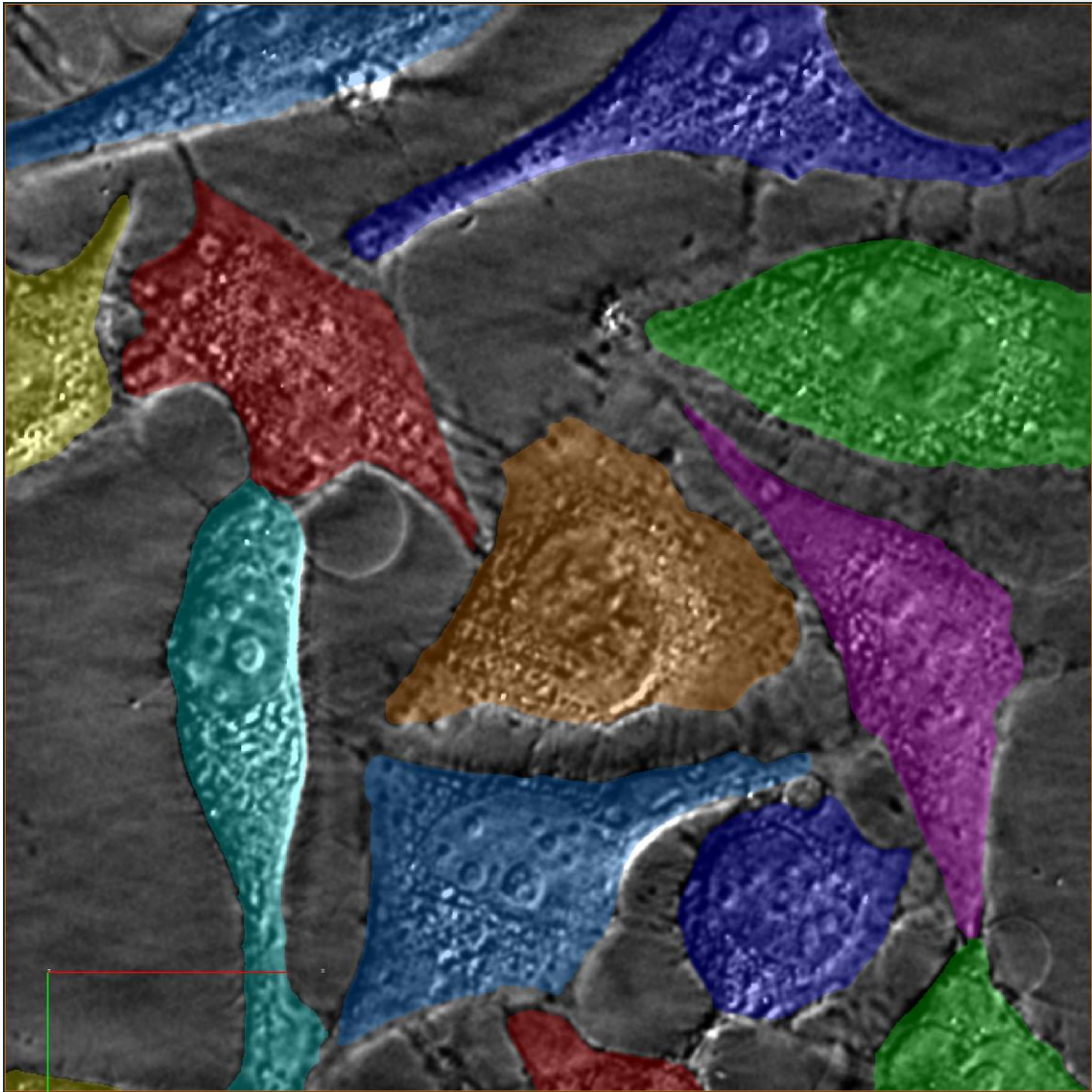
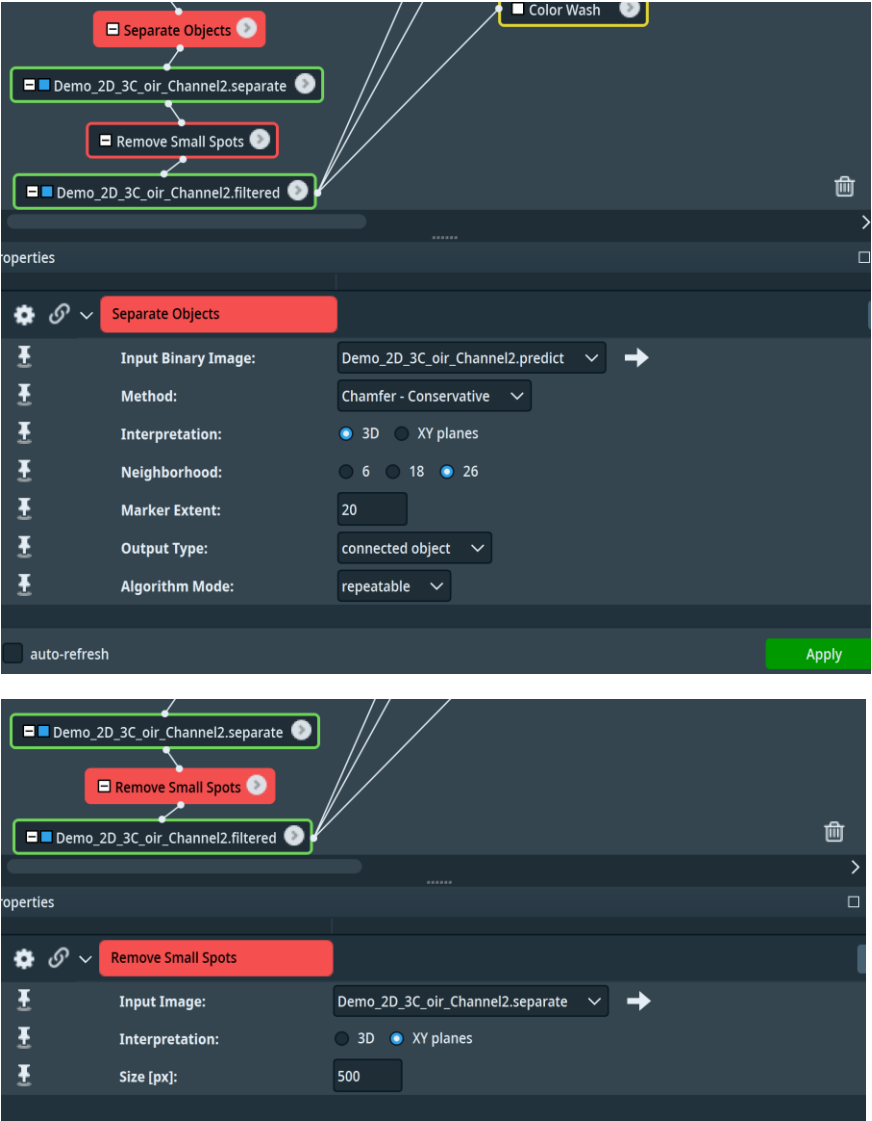
Custom Processing File: ICDeepLearning/TrainedModelDIC.py

Console: Show

auto-refresh

Apply

Individual cells separation



Segmentation of nuclei using a recipe

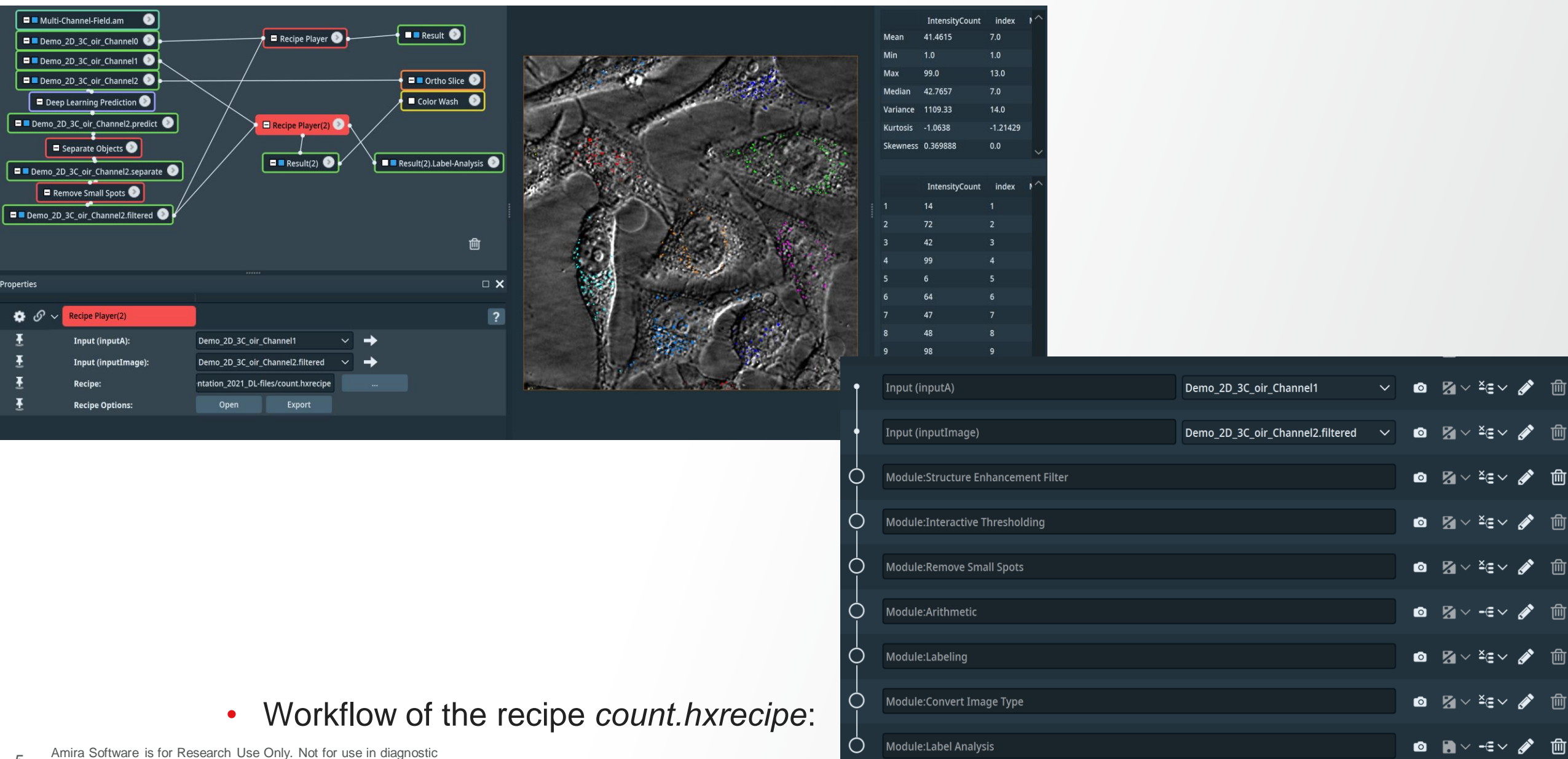
The screenshot displays the Amira software interface. On the left, a workflow graph shows the process starting with 'Multi-Channel-Field.am' and 'Demo_2D_3C_oir_Channel0' through 'Recipe Player' to 'Result'. Below this, the 'Properties' panel for 'Recipe Player' is visible, showing inputs for 'Input (inputImage): Demo_2D_3C_oir_Channel0' and 'Input (inputB): Demo_2D_3C_oir_Channel2.filtered', with a recipe named 'mentation_2021_DL-files/cell.hxrecipe'. On the right, a microscopy image shows segmented nuclei in various colors (red, green, blue, orange, purple, teal).

This screenshot shows a list of modules used in the recipe, each with a play button icon and a trash icon. The modules are:

- Input (inputImage)
- Input (inputB)
- Module:Image Gradient
- Module:Gaussian Filter
- Module:Interactive Thresholding
- Module:Fill Holes
- Module:Distance Map
- Module:H-Maxima
- Module:Invert
- Module:Erosion
- Module:Arithmetic
- Module:Marker-Based Watershed
- Module:Arithmetic(2)

- Workflow of the recipe *cell.hxrecipe*:

Segmentation and counting of mitochondria using a recipe



The screenshot displays the Amira software interface for processing microscopy data. The main window shows a grayscale image of a cell with segmented mitochondria. The interface is divided into several panels:

- Recipe Player:** A central panel showing the workflow steps. The steps include: Multi-Channel-Field.am, Demo_2D_3C_oir_Channel0, Demo_2D_3C_oir_Channel1, Demo_2D_3C_oir_Channel2, Deep Learning Prediction, Demo_2D_3C_oir_Channel2.predict, Separate Objects, Demo_2D_3C_oir_Channel2.separate, Remove Small Spots, Demo_2D_3C_oir_Channel2.filtered, Recipe Player, Result, Ortho Slice, Color Wash, Recipe Player(2), Result(2), and Result(2).Label-Analysis.
- Properties Panel:** Located at the bottom left, it shows the configuration for the selected recipe, Recipe Player(2). The inputs are Demo_2D_3C_oir_Channel1 and Demo_2D_3C_oir_Channel2.filtered. The recipe is ntation_2021_DL-files/count.hxrecipe. The options are Open and Export.
- Statistics Panel:** Located at the top right, it displays statistical data for the segmented objects. The data is organized into two tables.
- Module List:** Located at the bottom right, it lists the modules used in the recipe: Input (inputA), Input (inputImage), Module:Structure Enhancement Filter, Module:Interactive Thresholding, Module:Remove Small Spots, Module:Arithmetic, Module:Labeling, Module:Convert Image Type, and Module:Label Analysis.

Statistics Data:

	IntensityCount	index
Mean	41.4615	7.0
Min	1.0	1.0
Max	99.0	13.0
Median	42.7657	7.0
Variance	1109.33	14.0
Kurtosis	-1.0638	-1.21429
Skewness	0.369888	0.0

	IntensityCount	index
1	14	1
2	72	2
3	42	3
4	99	4
5	6	5
6	64	6
7	47	7
8	48	8
9	98	9

- Workflow of the recipe *count.hxrecipe*:

Thank you

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