

# Data Visualization Tools

This book presents some open source options for Data visualization

- [Fiji plugin for annotating movies with custom arrows](#)
  - [References and example](#)
  - [Plugin installation](#)
- [Napari](#)
  - [Napari: a fast, interactive viewer for multi-dimensional images in Python](#)
- [PetaKit5D](#)
- [CLIJ: GPU-accelerated image processing for everyone](#)

# Fiji plugin for annotating movies with custom arrows

Original work by Stefan Daetwyler, Carl D. Modes and Reto Fiolka.

# References and example

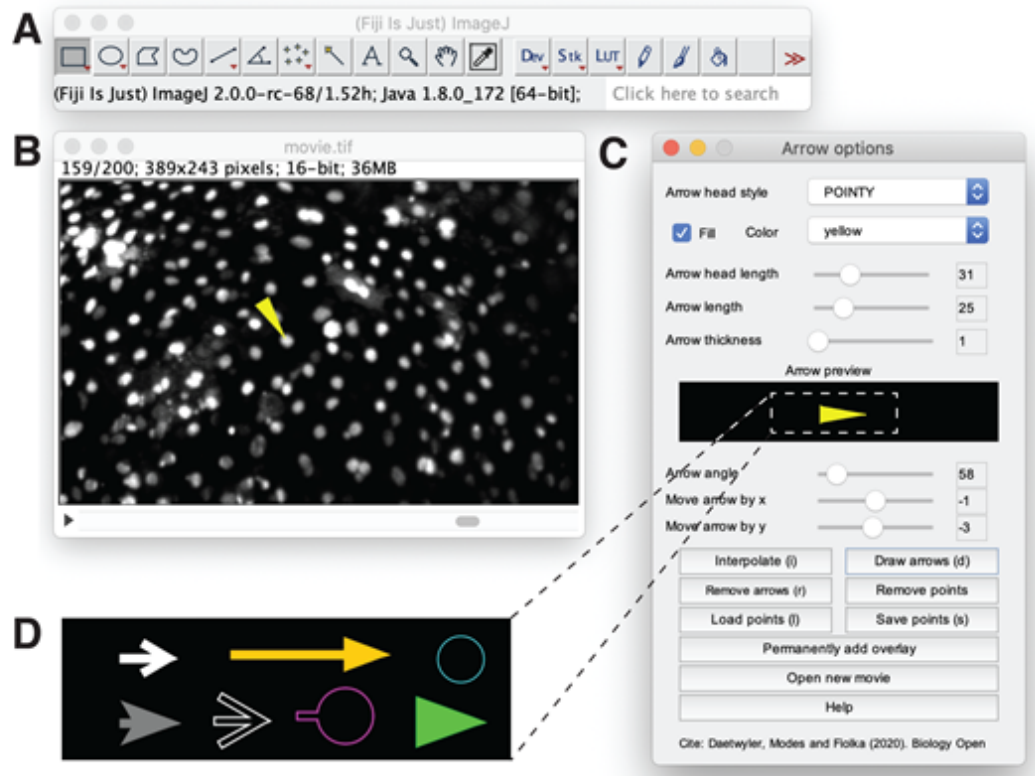
The Fiji plugin for annotating movies with custom arrows was developed by Stephan Daetwyler, Carl D.Modes and Reto Fiolka at UT SouthWestern.

To read about it and acknowledge the authors, please refer to [this publication](#).

## **ABSTRACT**

Annotation of time-lapse data provides an important tool to highlight dynamic processes. Particularly, arrows, circles and arrowheads are useful to pinpoint a specific process, stationary or evolving over time. Here, we describe a user-friendly Fiji plugin to facilitate annotation of movies with arrows, arrowheads and circles. The plugin also enables saving and loading of annotated tracks.

**Fig. 1.**



[View large](#)

[Download slide](#)

**Graphical user interface.** The graphical user interface to add custom graphical symbols to a movie is run in (A) Fiji. When the rectangular selection tool in the Fiji menu bar (A) is selected, the user can interact with the movie (B) to generate a trajectory of the process of interest. In the arrow options panel (C), the user chooses the style (shape), filling and color of the added graphical symbol. The current graphical symbol specified by the selected arrow head style, head length, length, thickness, fill status and color is previewed in an 'Arrow preview' field. The user can further determine the angle, and position (x and y) of the selected graphical symbol relative to the selected trajectory. Moreover, buttons on the arrow options panel help the user to navigate the annotation process and allow the user to open a new movie to annotate. (D) Selection of possible designs for the graphical symbol are obtained by changing the parameters in the arrow options panel.

Fiji plugin for annotating movies with custom arrows

# Plugin installation

Complete instructions for plugin installation can be found in [this publication](#).

The GitHub page with the source code can be found [here](#).

[Here](#) is a Youtube video with a tutorial to install and use the plugin.

# Napari

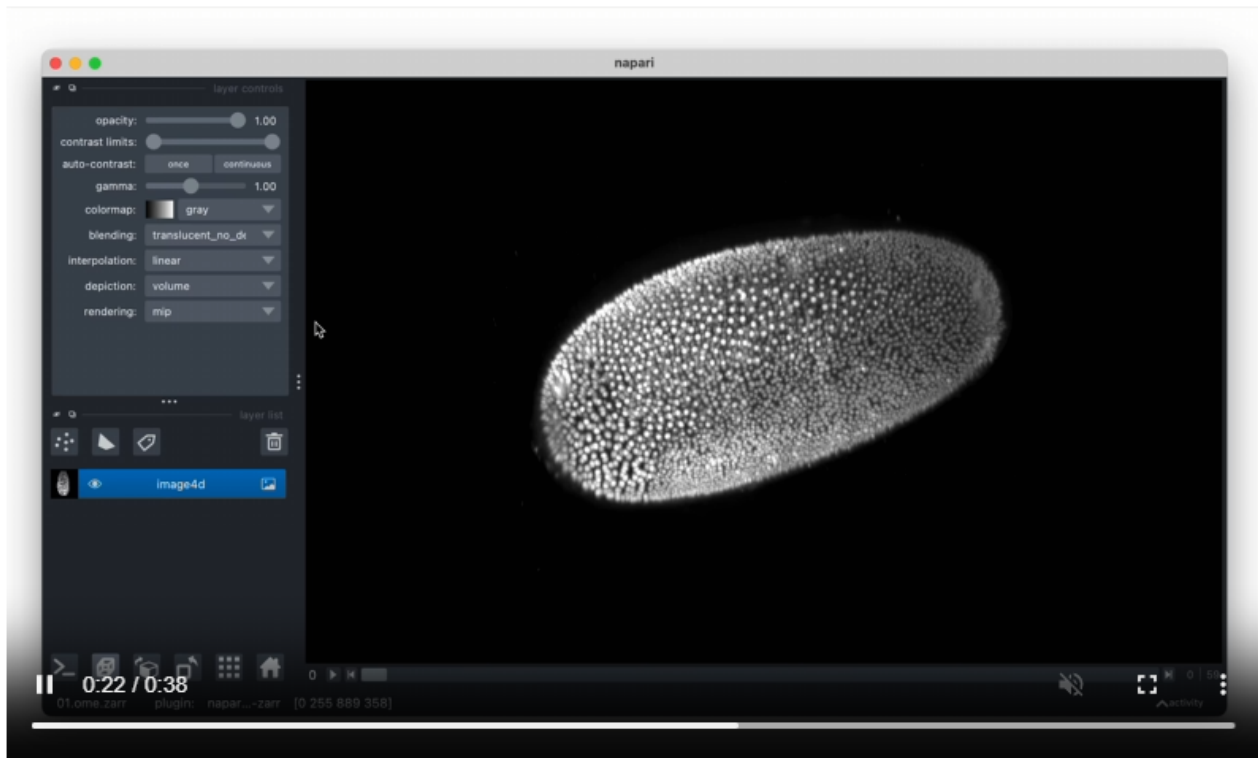
Napari

# Napari: a fast, interactive viewer for multi-dimensional images in Python

If you are using Python for image analysis already, Napari is a great package to help you visualize and render your data!

Documentation and downloads can be found on [this page](#).

Below is an example of 3D rendering in Napari.



```
napari.imshow(image4d)
```

Napari offers a lot of usage options such as the ones listed below.





napari



search

Ctrl

K

✓ Getting started

^ napari tutorials

✓ Annotation

✓ Processing

✓ Segmentation

✓ Tracking

^ How-to guides

✓ Using layers

✓ Extending napari

napari + ImageJ how-to guide

Napari in Docker

Performance monitoring

Running napari headlessly

Creating and testing themes

✓ In-depth explanations

Glossary

napari workshops

Sample databases

Troubleshooting

✓ Gallery

✓ Release notes

The Gallery gives examples of what you can do in terms of basic and advanced visualization. Check out the examples and see if you can use some of these tools to make awesome images and renderings for your papers and talks!

---

^ visualization-basic (22)

Add grayscale image  
Add image  
Add image transformed  
Add labels  
Add points  
Add points with features  
Add points with multicolor text  
Add points with text  
Add shapes  
Add shapes with features  
Add shapes with text  
Add surface 2D  
Add vectors  
Add vectors image  
Image depth  
Labels 2D  
Layers  
Minimum blending  
Pass colormaps  
Point cloud  
Set colormaps

**visualization-advanced (17)**

3D Paths  
3D image plane rendering  
Add multiscale image  
Add vectors color by angle  
Affine transforms  
Dynamic projections dask  
Export Figure  
Export regions of interest (ROIs) to png  
nD multiscale image  
nD multiscale image non-uniform  
Points over time  
Comparison of Screenshot and Figure Export  
Show points based on feature  
To screenshot  
Tracks 3D  
Tracks 3D with graph  
Visualizing optical flow in napari

# PetaKit5D

CLIJ: GPU-accelerated image  
processing for everyone