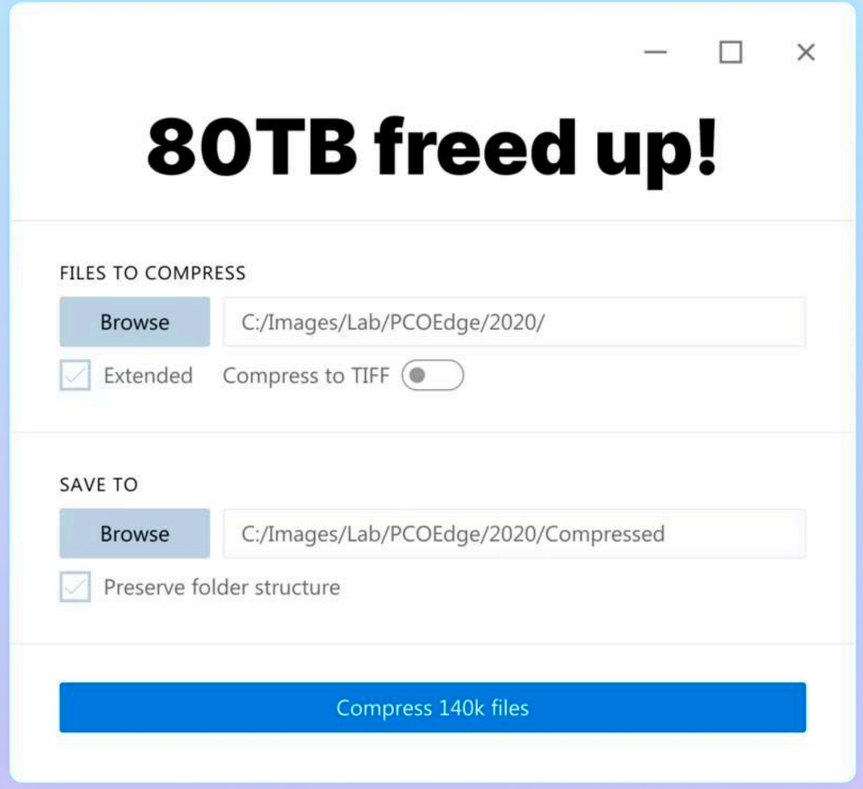
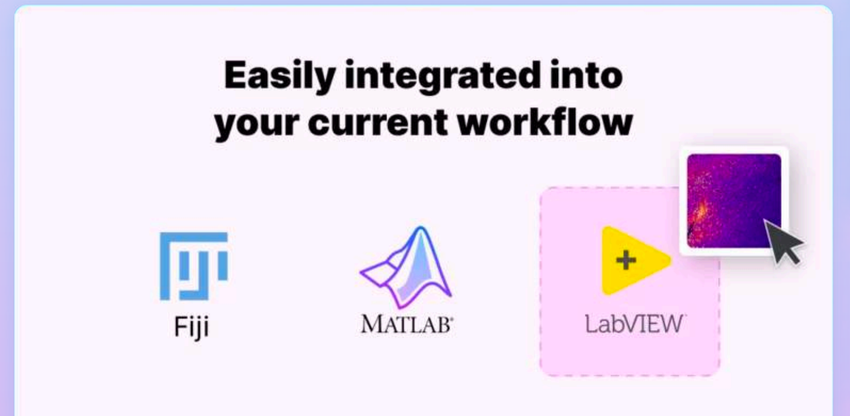
RAW image compression for critical applications and AI

JETRAW
by Dotphoton

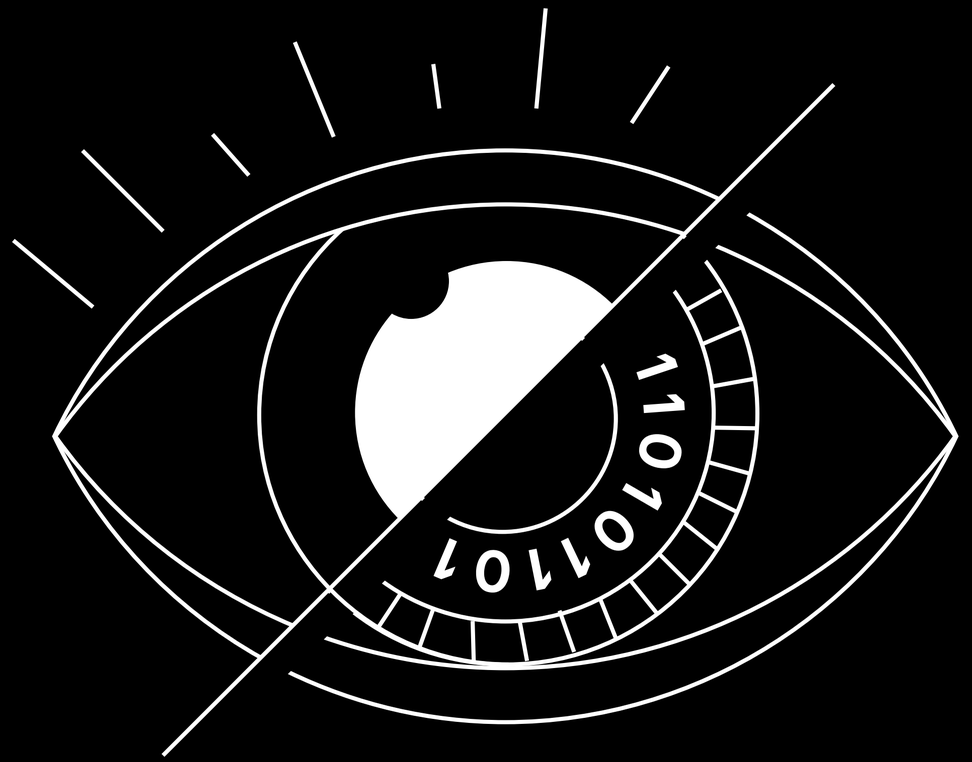




Targeted and optimized for machine vision:

- ✓ No artefacts
- ✓ No filtering
- ✓ No degradation to the image quality and information content

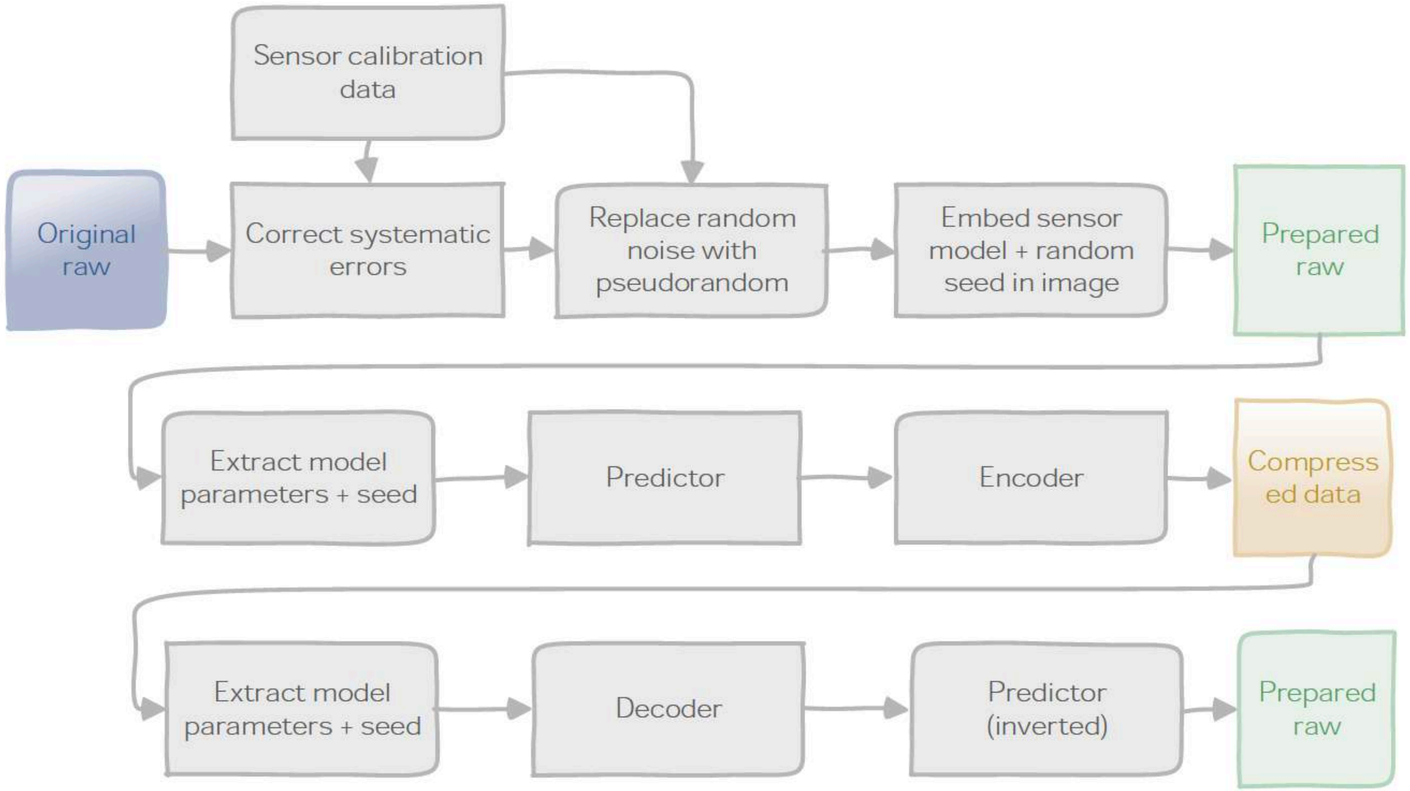
“It will react to advanced algorithms such as deconvolution, de-noisers, optical-flow, frequency analysis or any other algorithm, in the same way as a normal raw image.”



How does it work

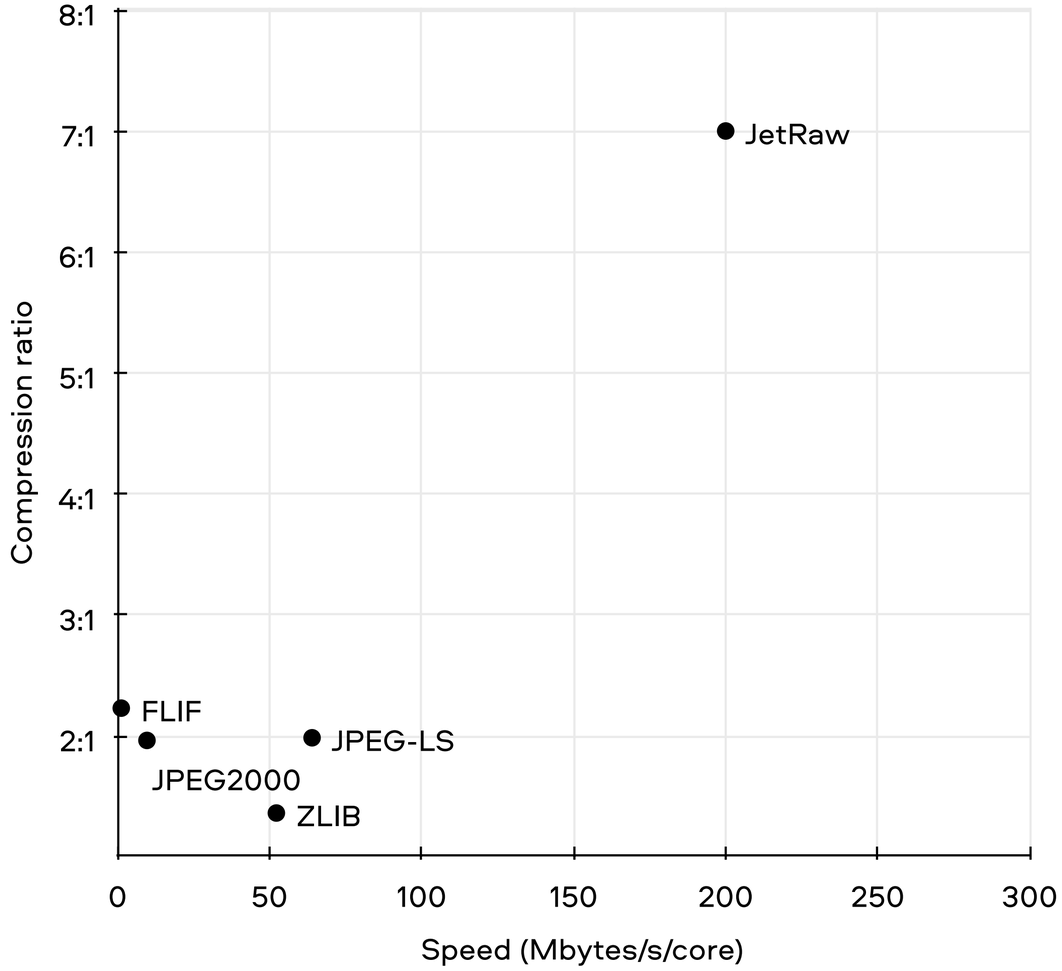
Main steps to compression/ decompression

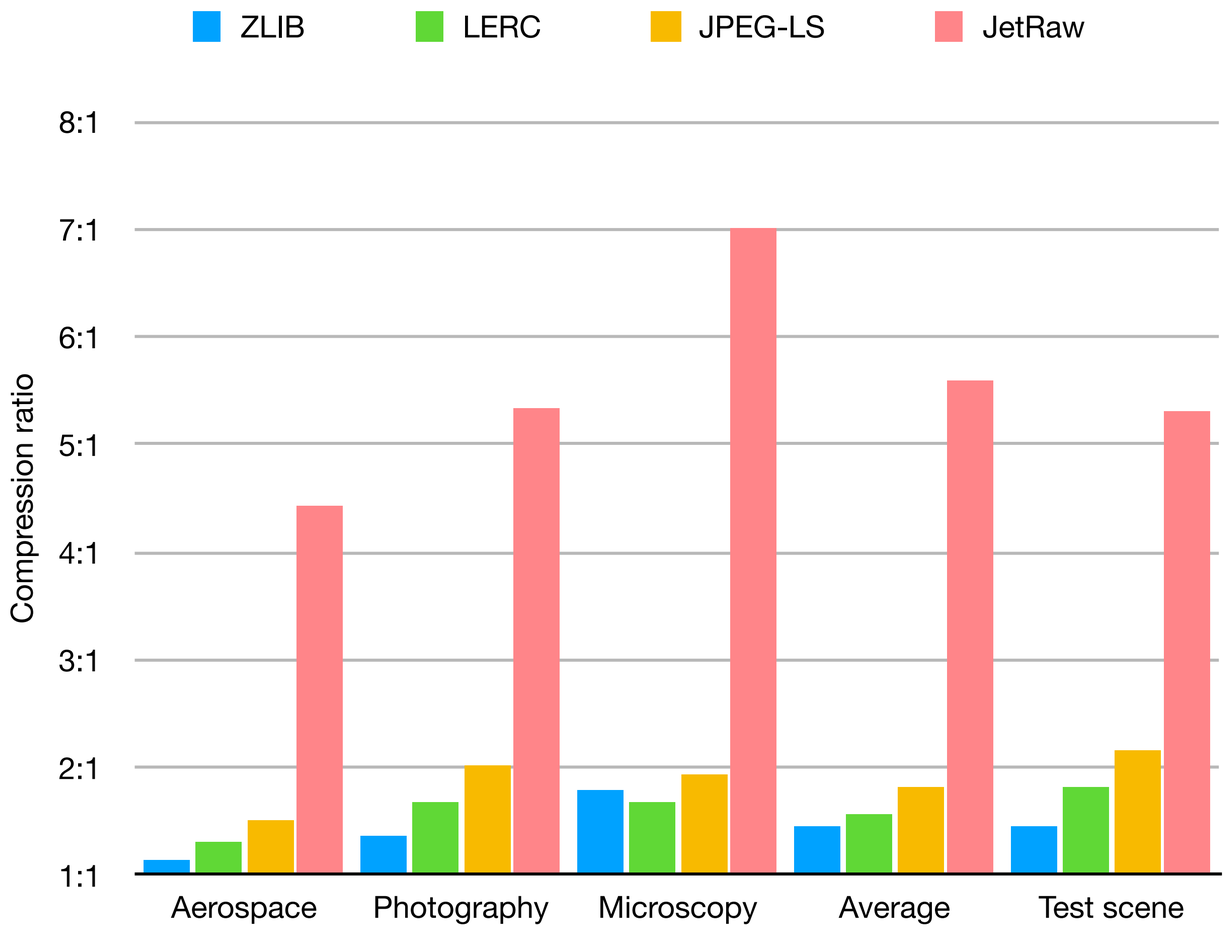
- Calibration of the camera
- Prepare image with a noise replacement (losses <1dB SNR, *(e.g. ISO100→ISO115)*)
- Compression (lossless)



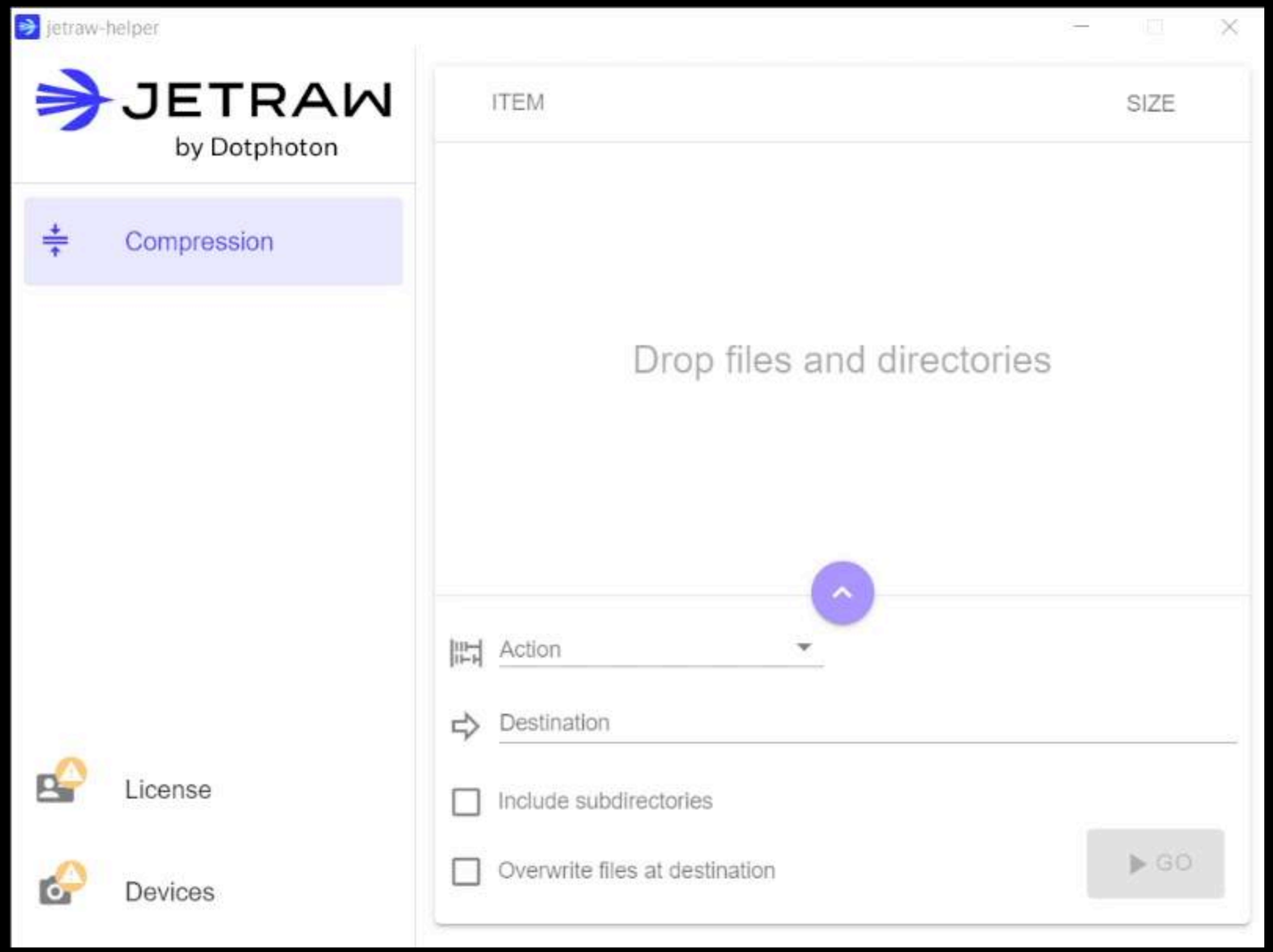
"*You pre-process the images once, then they can be losslessly encoded and decoded any number of times, and in any number of formats such as TIFF, DNG, PNG, HDF5, raw, etc.*"

Compression performance above industry standards

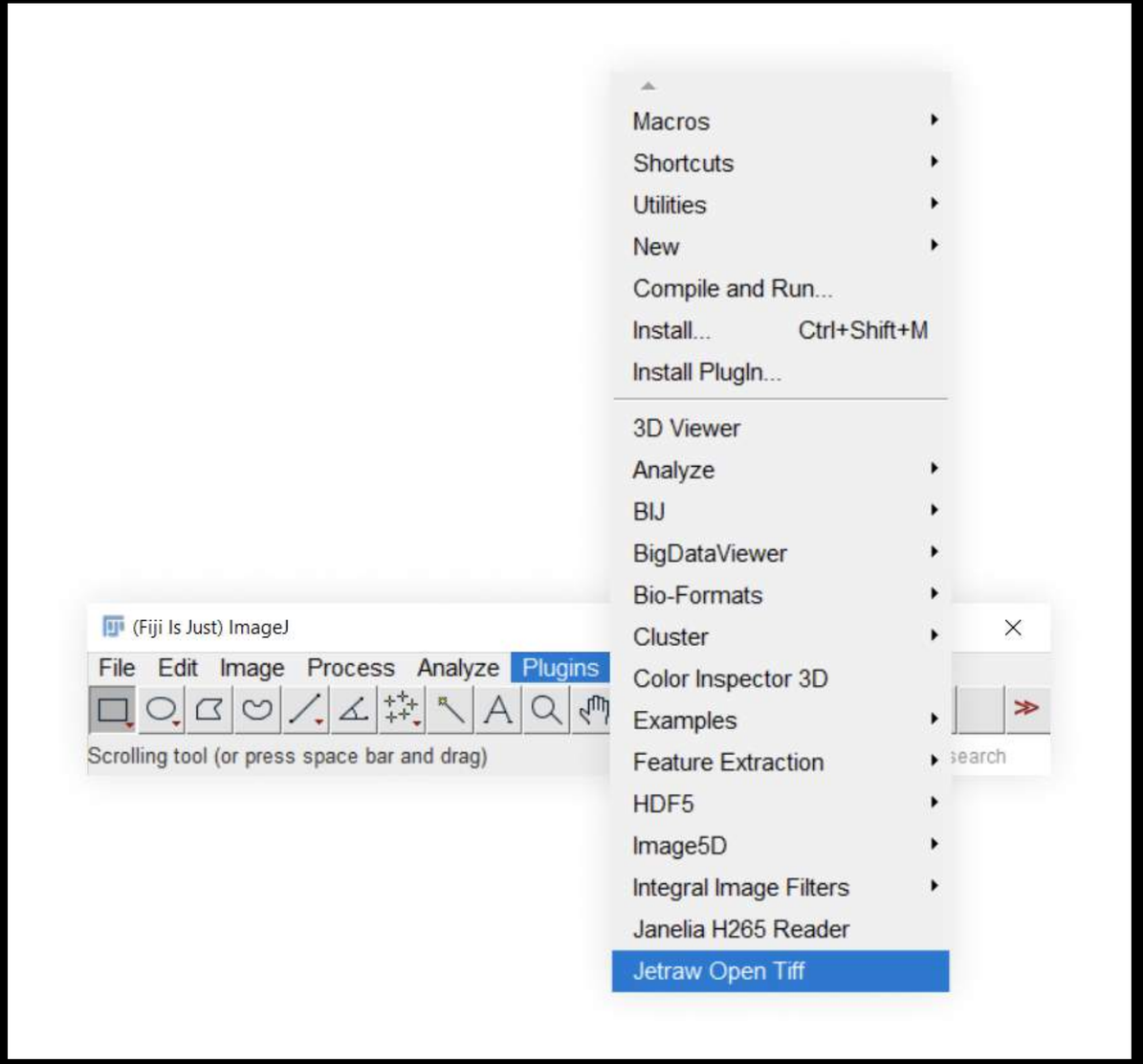




The software



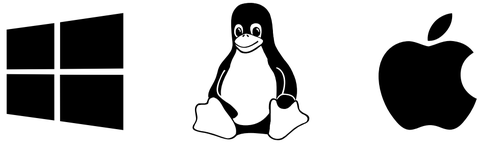
Visualisation



Integration

“Jetraw is not a file format, but rather a codec that can be registered with any file format that supports codecs“

Operating systems:



A line of code to register our DLL

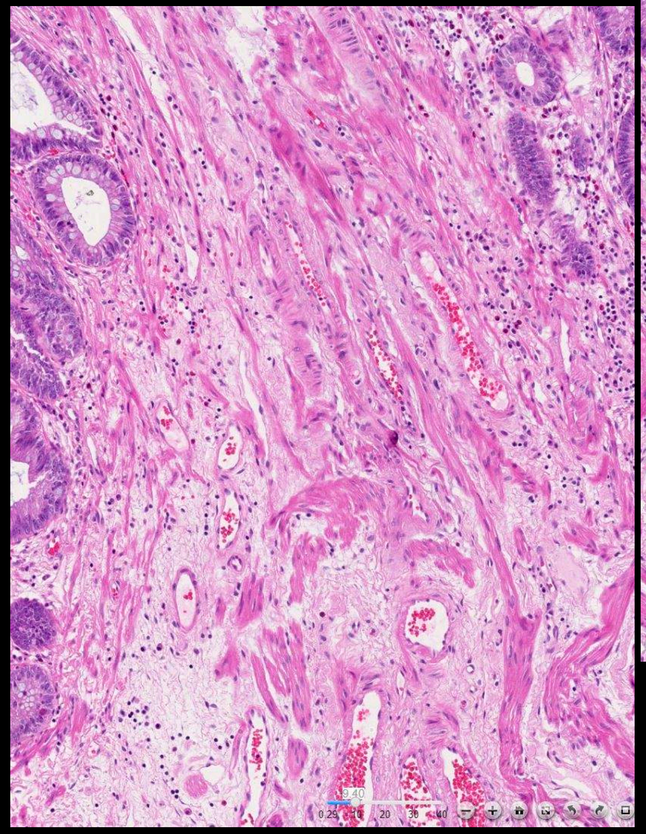
Integrate with existing formats:

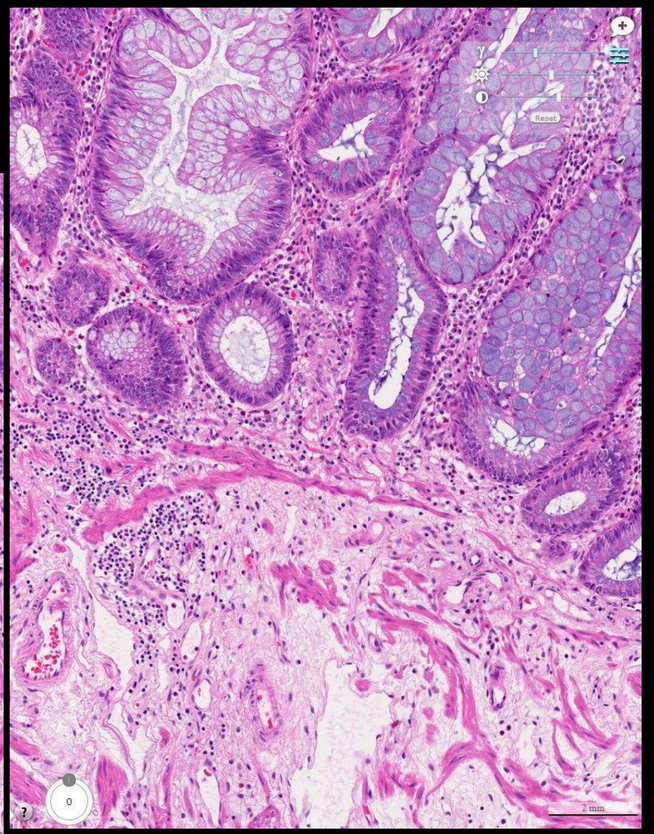
TIFF (biology)
DICOM (medical)
DNG (aerial)

Cameras:

PCO Edge Series
PCO Panda Sereis
Hamamatsu Orca Fusion
Hamamatsu ORCA-Fusion BT
ORCA-Flash4.0 V3 and V2
Andor Zyla 4.2, 4.2P
Photometrics 95B
Soon: Teledyne Photometrics Kinetix

From 400MB





To 60MB

Tested by industrial and academic partners

University of Glasgow
pco.
Viventis Microscopy
Université de Genève
Wyss Center
Imperial College London
EPFL
HUG

Collaborations

GAMAYA
hepia
esa
ITU
World Health Organization

…and many others

Michael Desert
michael.desert@dotphoton.com
+41 76 690 03 25

jetraw.com

What they say

jetraw.com

“Our lab reviewed a number of image compression algorithms and we selected the Jetraw by Dotphoton due to the combination of the method’s tight control on the maximum compression error, the compression ratio achieved and the algorithm speed.

We are in the process of integrating their compression into the image acquisition pipeline for our oblique plane light sheet fluorescence microscope. We achieve a compression factor of about 7-fold, which provides a big reduction in data storage costs.”

Chris Dunsby,
Imperial College London

jetraw.com

“The knowledge about the detector and the camera can be used beneficially with Dotphoton's solution. For this reason, it was extremely appealing from PCO's point of view to obtain a compression method that exploits the individual image capture chain of each camera (model).”

Gerhard Holst,
Head of Science & Research at PCO