


JIPipe: Designing automated image analysis pipelines without programming

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08/09/2022



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Ruman Gerst^{1,2}, Zoltan Cseresnyes¹, and Marc Thilo Figge^{1,3}

¹Applied Systems Biology, Leibniz Institute for Natural Product Research and Infection Biology - Hans-Knoll-Institute, Jena, Germany
²Faculty of Biological Sciences, Friedrich-Schiller-University Jena, Germany
³Institute of Microbiology, Faculty of Biological Sciences, Friedrich-Schiller-University Jena, Germany



JIPipe

Java Image Processing Pipeline (JIPipe, <https://www.jipipe.org/>) [1] is a plugin for ImageJ [2] that allows to create image processing pipelines without a script language. Instead users only have to design a flow-chart by connecting processing steps (nodes) to each other in a visual programming language.

- 1000+ commonly used functions from ImageJ and popular plugins
- Intuitive and modern user interface
- Powerful annotation system for tracking metadata
- Standardized and automated output to hard drive

Image analysis powered by ImageJ

JIPipe integrates plenty of image analysis functions from ImageJ, such as image import, thresholding, contrast enhancement, edge detection, or extracting measurements. Additionally, we provided support for popular plugins including ...

- Bio-Formats
- OMERO
- MorphoLibJ
- FeatureJ
- Multi-Template-Matching
- Trainable Weka segmentation
- Soom: Trackmate
- Soom: Coloc2

To allow even greater flexibility, users can utilize ImageJ macro, Python, and R script nodes to write or re-use custom code inside the JIPipe environment.

GPU processing and deep learning




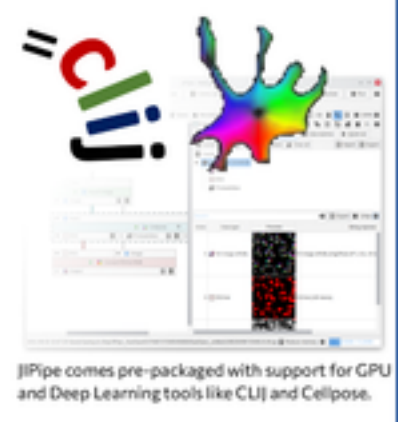
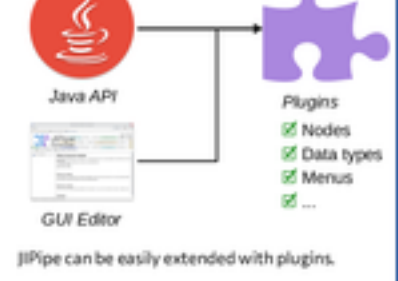
JIPipe allows easy utilization of state-of-the-art image analysis algorithms via its automated data management capabilities. The current version includes the functions provided by the powerful CLij2 [3] library, as well as the powerful deep learning platform Cellpose [4].

- CLij2 algorithms for GPU-accelerated image processing
- Deep learning via Cellpose
- Soon: Omnipose support
- Soon: Tensorflow integration

Additional features via plugins

JIPipe already provides many features, including nodes for table processing, plotting, sorting and distributing data, user interaction during the pipeline, and more.

Additional features can be easily developed in Java as ImageJ plugin, or created within a GUI tool that allows anyone to create new nodes. These are also automatically available from inside ImageJ, as JIPipe exports all its functions to ImageJ.

ruman.gerst@leibniz-hki.de

www.leibniz-hki.de

References

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