

Interactive image analysis with ilastik

Stuart Berg, Markus Doering, Burcin Erocal, Luca Fiaschi, Carsten Haubold, Fred A. Hamprecht, Bernhard X. Kausler, John Kirkham, Jens Kleesiek, Anna Kreshuk, Thorben Kroeger, Ullrich Koethe, Christoph Straehle, Martin Schiegg, Buote Xu, Chong Zhang

The interactive learning and segmentation toolkit (ilastik) is a modular software framework, which allows for interactive visualization and analysis of very large datasets in up to 5 dimensions. Most analysis operations are performed lazily, which enables targeted interactive processing of data subvolumes, followed by complete volume analysis in offline batch mode. The main application, driving the development of ilastik, is large-scale automated processing of biomedical images. Our main interest lies in learning-based image processing, which allows the user to concentrate on the analysis task by providing examples, rather than tuning the algorithm parameters. Most common tasks performed with ilastik include - but are not limited to - image segmentation, classification, tracking and density estimation. In this talk, we will give an overview of ilastik and show the latest additions to its workflow stack on challenging biological data. ilastik is available as free and open source software at www.ilastik.org.