

# Introduction to ImgLib2

## Abstract

ImgLib2 is an open-source Java library for n-dimensional image processing and representation. It enables generic algorithm implementations that are independent of specific dimensionality, pixel type, and underlying data representation. This allows easy handling of n-dimensional datasets, arbitrary data types and various data representations (in memory, on disc, from the web). ImgLib2 is fully integrated into ImageJ/Fiji through light-weight, non-copying wrappers and it serves as the basis of the newly developed ImageJ2.

The goal of this workshop is to introduce the functionality and power of the ImgLib2 library to non-expert programmers. We will introduce hands-on basic concepts of developing with ImgLib2 using the Fiji Script Editor. We will implement several small but powerful algorithms:

- Thresholding
- Center of mass
- Gradient

These implementations will illustrate the principles of iteration, random access, data type independence and n-dimensionality and will serve as an entry point for non-expert ImageJ developers to write their own plugins using ImgLib2.

## Keywords

ImgLib2, n-dimensional image processing

## Administrative data

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**Hardware and Software Requirements:** Participants should have a computer with Fiji installed and updated to the newest version.

**Knowledge of participant:** Participants should be familiar with ImageJ/Fiji and have basic programming skills.

## Workshop material

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