

aiDoseBoosterTraining

aiDoseBoosterTraining trains a neural network to be used later on in aiDoseBooster. Based on the Noise2Noise idea where noisy movie stack images are used for training.

aiDoseBoosterTraining can be used without a configuration file and all parameters can be provided by command line arguments. For convenience, parameters can also be given using a configuration file with the **-u** command line argument. Note: If a parameter is passed by file and by command line, the command line overrides the file.

Options are:

CudaDeviceID

The deviceID of the GPU to use.

Argument for command line: **-d** or **--CudaDeviceID**

Type: **int**

Option is mandatory: **false**

Default value if not set: **0**

Input

The file to process.

Argument for command line: **-i** or **--Input**

Type: **string**

Option is mandatory: **true**

DeadPixelRemoval

Enables removal of dead pixels based on thresholding. If set to 'relative', the threshold is X times the STD + MEAN of the image.

Argument for command line: **-deadPixel** or **--DeadPixelRemoval**

Type: one of [**ABSOLUTE**, **NONE**, **RELATIVE**]

Option is mandatory: **false**

Default value if not set: **NONE**

Possible notations:

- **ABSOLUTE**: ABSOLUTE, Absolute, absolute
- **NONE**: NONE, None, none
- **RELATIVE**: RELATIVE, Relative, relative

DeadPixelThreshold

Threshold above which a pixel is considered invalid.

Argument for command line: **-threshold** or **--DeadPixelThreshold**

Type: **float**

Option is mandatory: **true**

Only applicable if

- **DeadPixelRemoval** = ABSOLUTE or
- **DeadPixelRemoval** = RELATIVE

Network

The file to store the trained network configuration.

Argument for command line: **-n** or **--Network**

Type: **string**
Option is mandatory: **true**

NetworkIn

If given, the training refines the provided network configuration.
Argument for command line: **-ni** or **--NetworkIn**
Type: **string**
Option is mandatory: **false**
Default value if not set: **"**

Iterations

The number of iterations to train the network.
Argument for command line: **-iter** or **--Iterations**
Type: **int**
Option is mandatory: **true**

ResetIterations

When refining an existing network, this parameter allows to reset the iteration counter in order to put more weight on the new dataset.
Argument for command line: **-resetIter** or **--ResetIterations**
Type: **bool**
Option is mandatory: **false**
Default value if not set: **false**

DeadPixelMap

An image indicating defective pixels (same size as movie frames).
Argument for command line: **-deadPixelMap** or **--DeadPixelMap**
Type: **string**
Option is mandatory: **false**
Default value if not set: **"**

GainReference

An image for gain reference (same size as movie frames).
Argument for command line: **-gainRef** or **--GainReference**
Type: **string**
Option is mandatory: **false**
Default value if not set: **"**

Skip

Skip the X first frames of a stack.
Argument for command line: **-skip** or **--Skip**
Type: **int**
Option is mandatory: **false**
Default value if not set: **0**

FlipYAxis

Flip all images on Y axis before any processing.
Argument for command line: **-flip** or **--FlipYAxis**

Type: **bool**
Option is mandatory: **false**
Default value if not set: **false**