

MinimaImpositionImageFilter

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Abstract: A filter to impose to the input image the minima defined in the marker image

Keywords: minima imposition, mathematical morphology

1 Description

MinimaImpositionImageFilter is a filter to impose a set of minima defined in the marker image to the input image. It may be used with the watershed filter to perform a marker-controlled segmentation.

2 Implementation

MinimaImpositionImageFilter is implemented as a sequence of filters.

3 Usage

Import the header

```
#include "itkMinimaImpositionImageFilter.h"
```

Create the filter

```
typedef itk::MinimaImpositionImageFilter< IType, IType > FilterType;  
FilterType::Pointer filter = FilterType::New();
```

MinimaImpositionImageFilter requires an input image, and a marker image which defines the minima to impose. All non zero pixels in the marker image are minima to impose.

```
filter->SetInput( reader->GetOutput() );  
filter->SetMarkerImage( reader2->GetOutput() );
```

During the minima imposition, the image is shifted by 1 by default to avoid having to markers in the same minima. However, the default value may not be relevant in some cases and can thus be modified with the `SetShift()` method.

```
filter->SetShift( 1 );
```

`MinimalImpositionImageFilter` is a connected component filter. With the `SetFullyConnected()` method, the user can define whether the connected components are defined strictly by face connectivity or by face+edge+vertex connectivity.

```
filter->SetFullyConnected( true );
```

4 Example

The Figure 1 show the input image in gray, and a single user defined marker in red. The Figure 2 is the output of the filter.

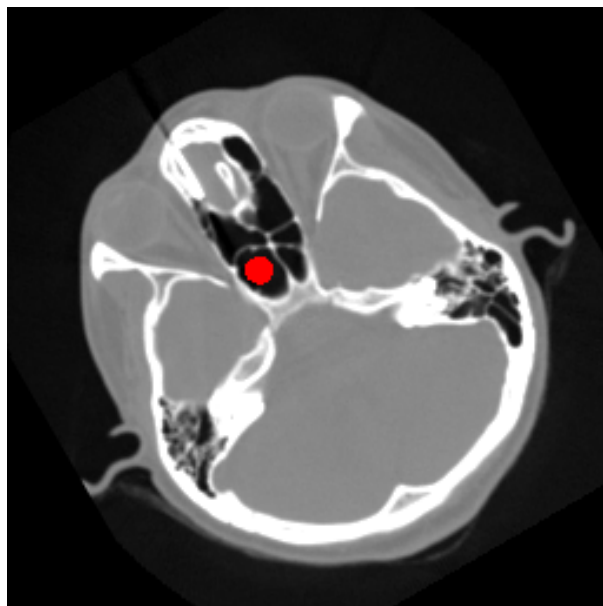


Fig. 1 The input image together with the marker (in red).

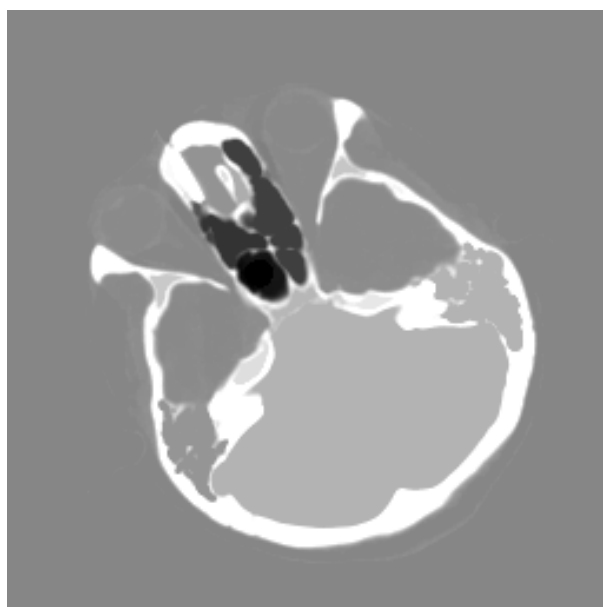


Fig. 2 The output image.