scikit-image

image processing in python

`skimage.viewer`:

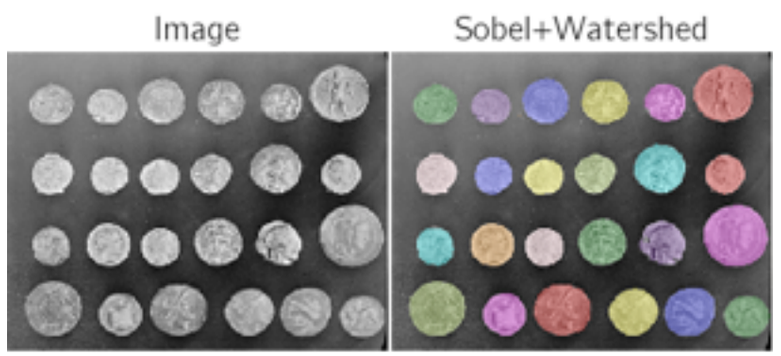
Interactive image viewer

Tony S. Yu

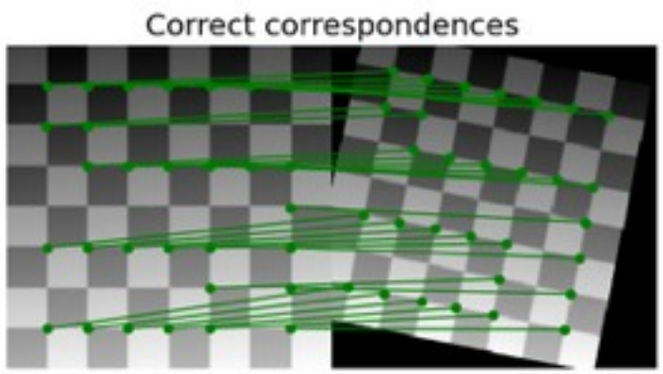
scientific software developer

ENTHOUGHT

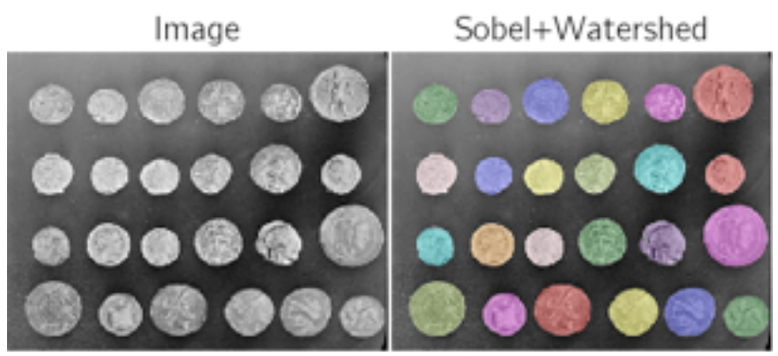
SciPy 2013



`skimage.segmentation`



skimage.feature



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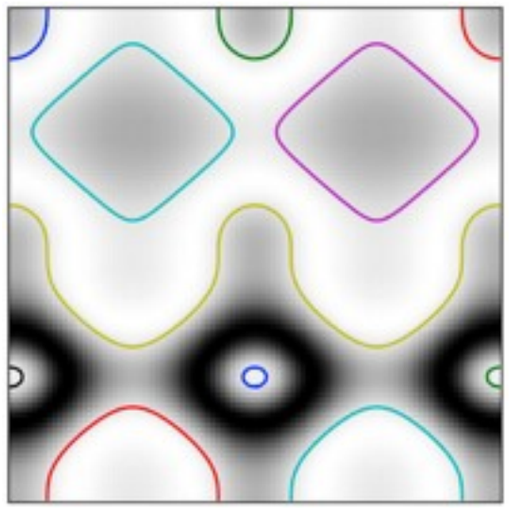
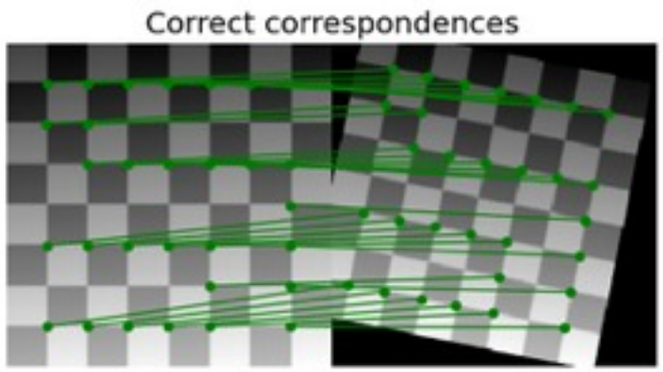


skimage.measure



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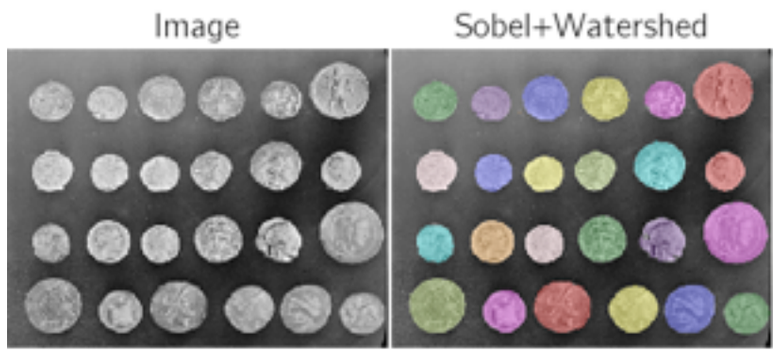

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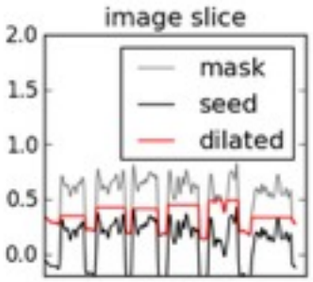
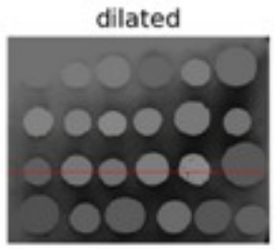
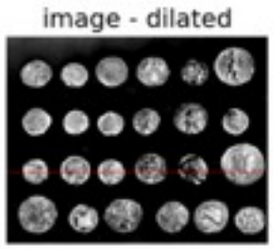
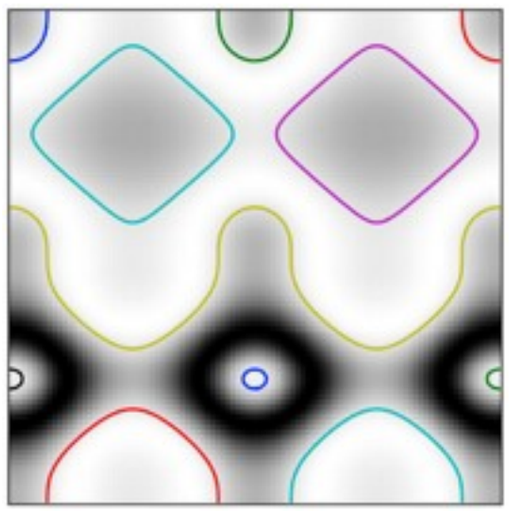






skimage.morphology



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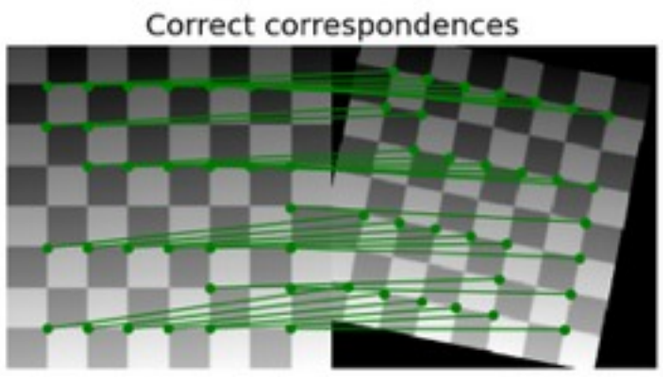

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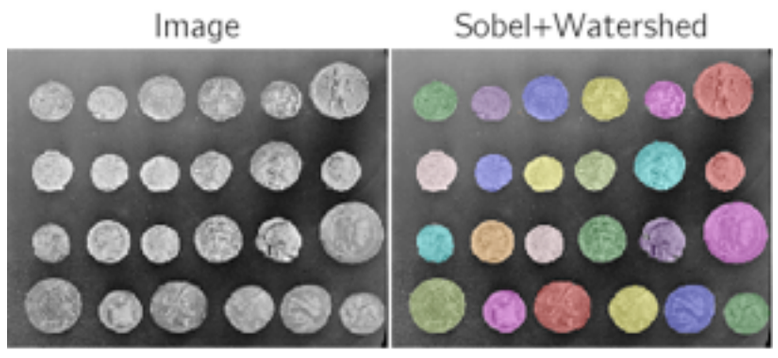

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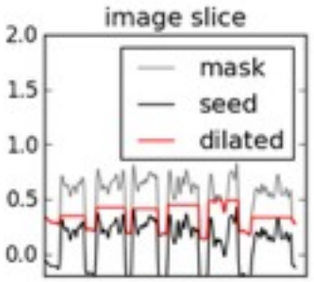

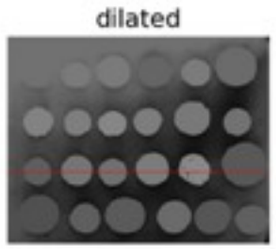

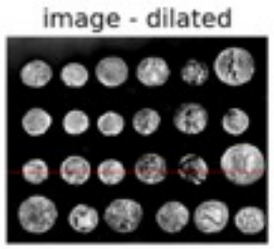

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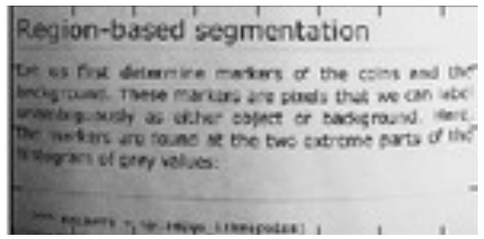
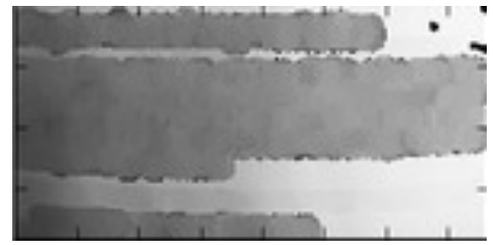
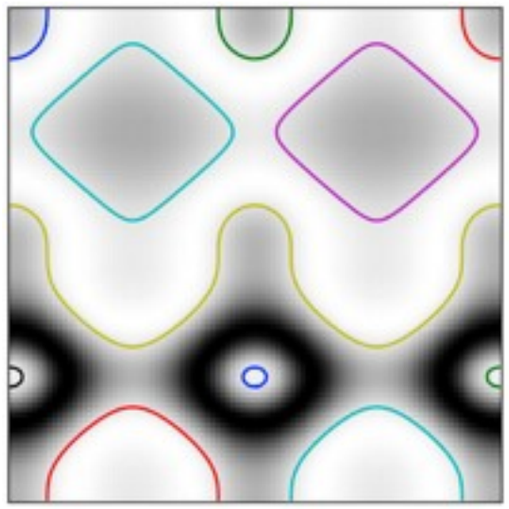




skimage.filter



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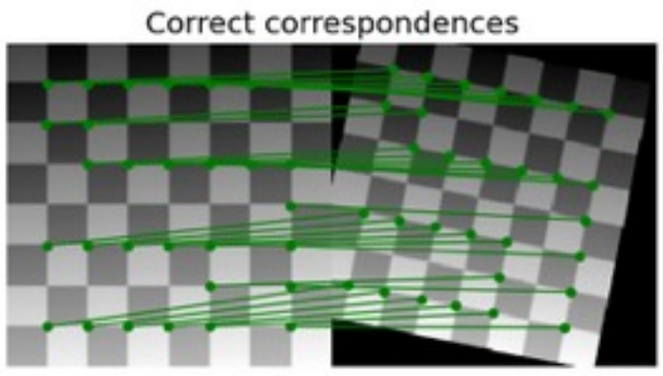

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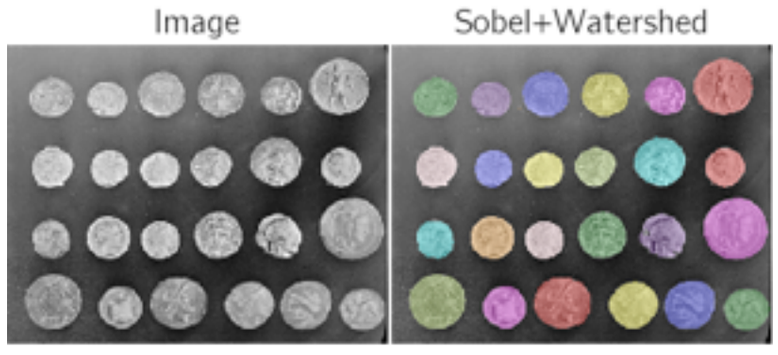

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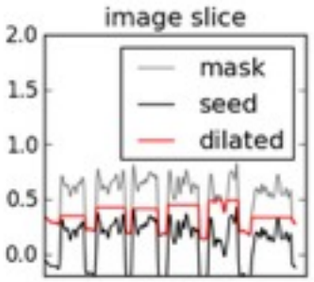

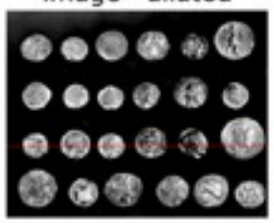

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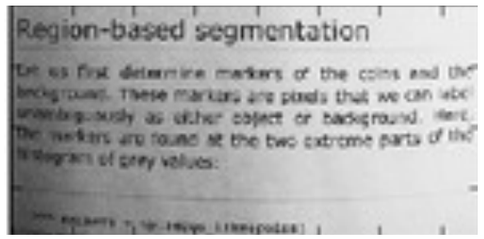

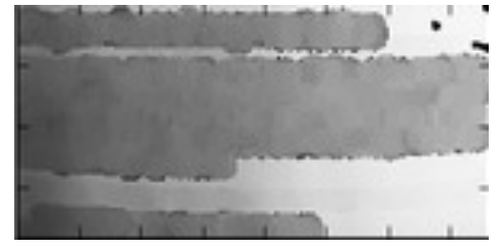

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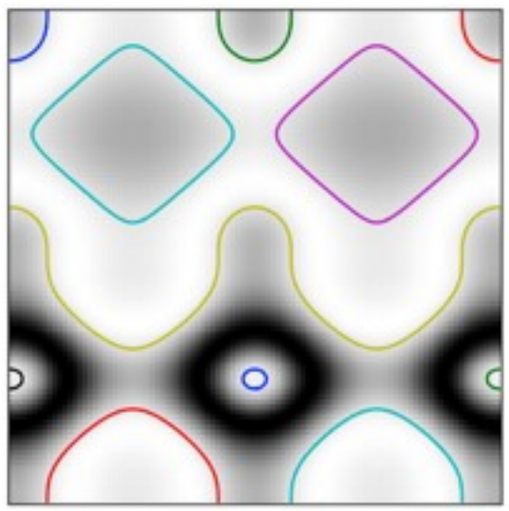
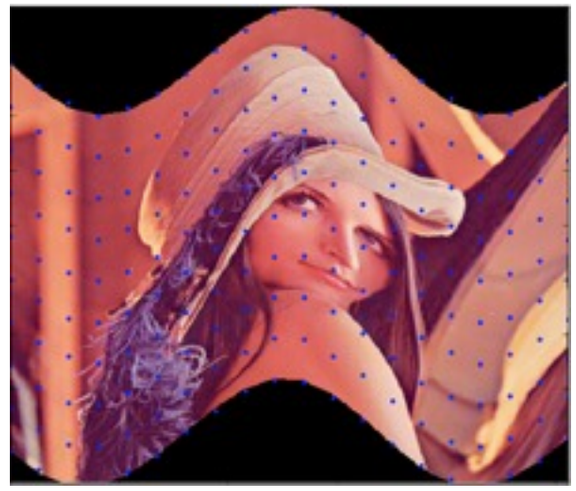
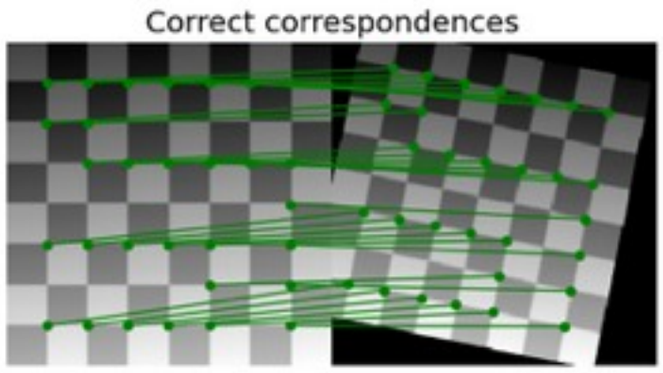


skimage.measure



skimage.transform



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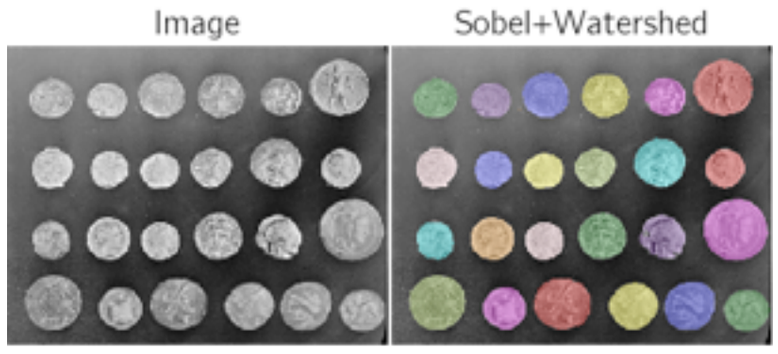

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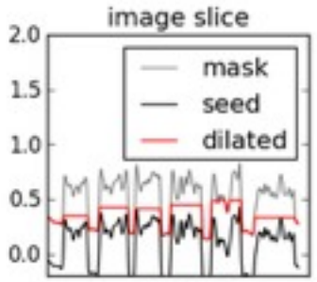

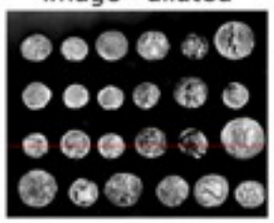

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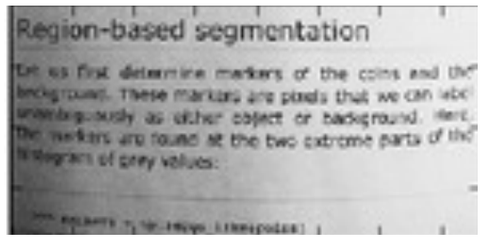

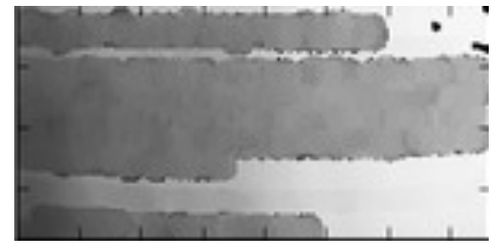

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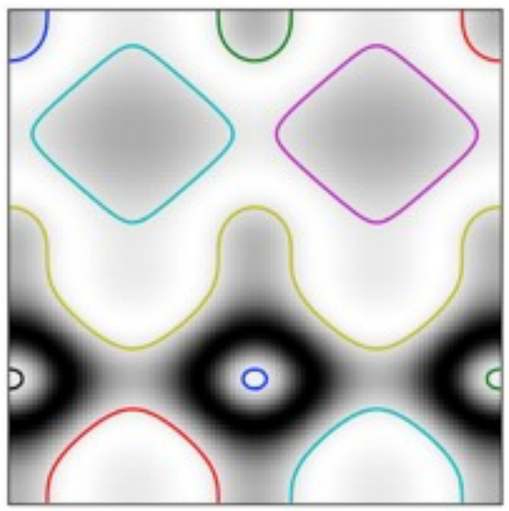

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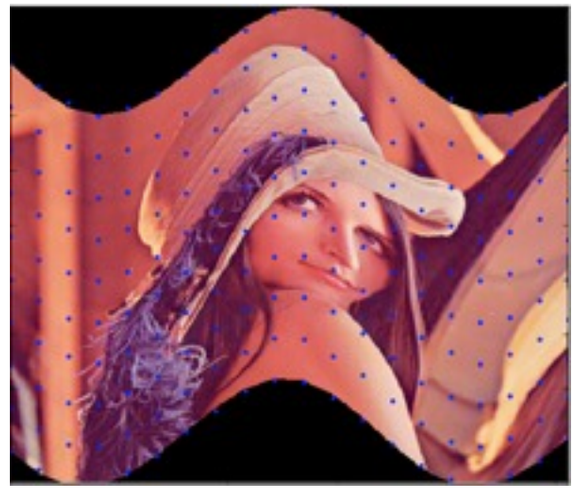

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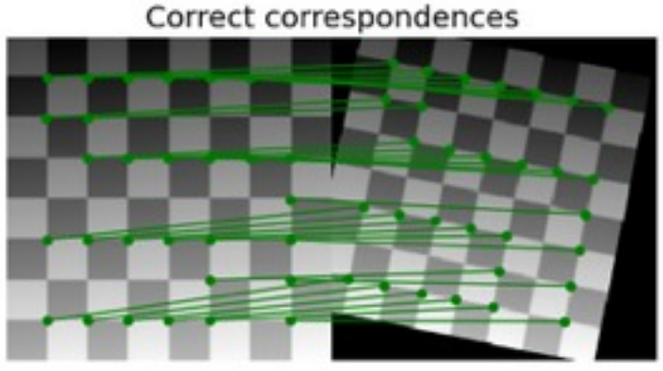

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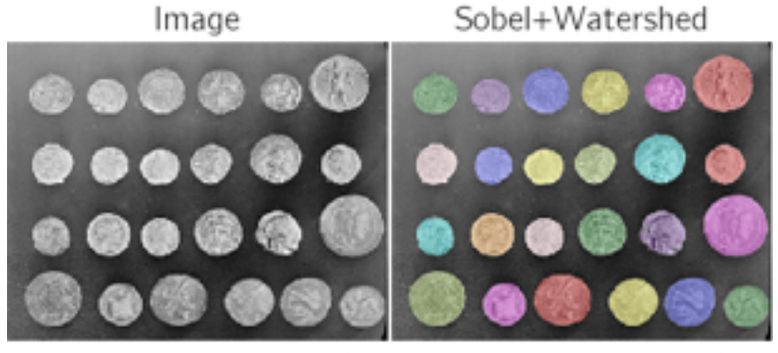

skimage.segmentation

- skimage.io
- skimage.color
- skimage.exposure
- skimage.viewer

scikit-image viewer

- Started by Guilluame Gay as a PR to add a line profile tool

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  - Qt windows and widgets
  - Matplotlib for drawing images, interaction, ease of plotting (histograms, lines, etc.)

The basic viewer

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from skimage import data
from skimage.viewer import ImageViewer

image = data.camera()
viewer = ImageViewer(image)
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from skimage import data
from skimage.filter import canny
from skimage.viewer import ImageViewer
from skimage.viewer.plugins.overlayplugin import OverlayPlugin
from skimage.viewer.widgets import Slider


class CannyPlugin(OverlayPlugin):

    def __init__(self, *args, **kwargs):
        super(CannyPlugin, self).__init__(image_filter=canny, **kwargs)

    def attach(self, image_viewer):
        self.add_widget(Slider('sigma', 0, 5))
        self.add_widget(Slider('low threshold', 0, 255, value_type='int'))
        self.add_widget(Slider('high threshold', 0, 255, value_type='int'))

        super(CannyPlugin, self).attach(image_viewer)


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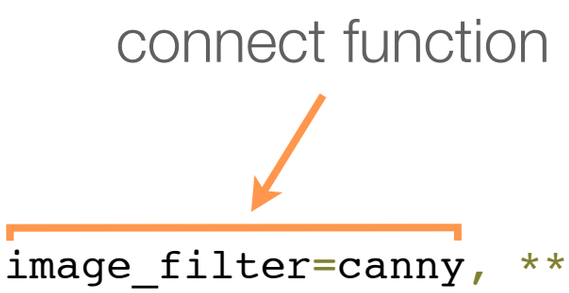

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Quick plugin syntax

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from skimage.filter import canny

from skimage.viewer import ImageViewer
from skimage.viewer.widgets import Slider
from skimage.viewer.plugins.overlayplugin import OverlayPlugin
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plugin = OverlayPlugin(image_filter=canny)
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viewer = ImageViewer(data.camera())
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viewer.show()
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Live Demos

Thanks to ...

- Stéfan van der Walt (scikit-image BDFL)
- Guillaume Gay for the line-profile tool and original inspiration
- Steven Silvester for testing / PR-review and suggesting some user-interface improvements
- All scikit-image developers and contributors

scikit-image

- Join the scikit-image Sprint this Friday
- website: `skimage.org`
- repo: `github.com/scikit-image/scikit-image.git`

  `github.com/scikit-image/scikit-image/tree/master/viewer_examples`
- mailing-list: `groups.google.com/forum/#!forum/scikit-image`
- me: `tyu@enthought.com`