Subject: Area of a Blob
Posted by David Fanning on Wed, 11 Dec 2002 18:40:28 GMT
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Folks,

Here is a question for you:

How much money did you make this year?

Oh, wait, sorry. That has the same answer, but
it's the wrong question. Here it is:

What is the area of a blob on an image?

The answer, of course, is that it depends on who
is asking.

Ben Tupper and I were musing about this question this
week, because it turns out you can get several answers,
depending upon how you calculate it.

Here are the results I got for a typical "blob" on
an image I am analyzing:

```
Area by .....
              Simple Count:  7390.00
               Russ Method:  7236.50
          PolyfillV Method:  7313.00
   IDLgrROI computeGeometry: 7236.50
      IDLgrROI Mask Method: 7391.00
```

The Simple Count method just finds the unique indices in
the ROI. The Russ method and the PolyFillV method involve
calculating the chain code boundary of the ROI and using
that to count the area of the pixels inside the boundary.
The PolyFillV method misses most of the boundary pixels
on the upper-right of the ROI. The Russ algorithm is this:

```
area = sum( (x(I) + x(i-1)) * (y(I) - y(i-1)) ) / 2.
```

Where X and Y are the boundary points that close back on
themselves. (We use my FIND_BOUNDARY program to find the
boundary.)

The Compute Geometry and ROI Mask method are used in
IDL IDLgrROI object.

What do you make of this? Does anyone have any insight?
Does it matter how you computer area as long as you are
consistent? Or is one method more accurate than others?
What is the *real* answer?

Appreciate your thoughts. :-)

Cheers,

David

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