
Subject: Re: Segmentation in ENVI
Posted by [Tal](#) on Wed, 10 Sep 2008 06:19:22 GMT
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Hi Mort,

Try LABEL_REGION in IDL.
basically does a similar thing, only asks for a n-dimensional image array as input. so you can separate your classification map to a 3D cube with as many classes you have (including 'Unclassified') and feed that to label_region as the data argument.

Tal

Subject: Re: Segmentation in ENVI
Posted by [Mort Canty](#) on Wed, 10 Sep 2008 08:52:10 GMT
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Tal schrieb:

> Hi Mort,
>
> Try LABEL_REGION in IDL.
> basically does a similar thing, only asks for a n-dimensional image
> array as input. so you can separate your classification map to a 3D
> cube with as many classes you have (including 'Unclassified') and feed
> that to label_region as the data argument.
>
> Tal

Sounds good. Many thanks, Tal.

Mort

Subject: Re: Segmentation in ENVI
Posted by [guillermo.castilla.ca](#) on Wed, 10 Sep 2008 16:46:29 GMT
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Mort,

This involves several calls to Label_Region, but perhaps is easier than Pal's suggestion (and will work also for a 8-neighborhood, by including the /all kw in the call):

```
limg = LABEL_REGION(climg EQ cl[0],/ULONG)
FOR i = 1, n - 1 DO BEGIN
```

```
mxlb = MAX(limg)
climgi = climg EQ cl[i]
limg = TEMPORARY(limg) + (LABEL_REGION(climgi, /ULONG) +
climgi*maxlb)
ENDFOR
```

Where climg is your classified image and cl is an array of n elements containing the (numeric) labels of your classes. You might need to zero the frame of your image before doing this.

Cheers

Guillermo

```
>> Hi Mort,
>
>> Try LABEL_REGION in IDL.
>> basically does a similar thing, only asks for a n-dimensional image
>> array as input. so you can separate your classification map to a 3D
>> cube with as many classes you have (including 'Unclassified') and feed
>> that to label_region as the data argument.
>
>> Tal
>
> Sounds good. Many thanks, Tal.
>
> Mort
```

Subject: Re: Segmentation in ENVI
Posted by [Mort Canty](#) on Wed, 10 Sep 2008 18:51:44 GMT
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guillermo.castilla.castellano@gmail.com schrieb:

```
> Mort,
>
> This involves several calls to Label_Region, but perhaps is easier
> than Pal's suggestion (and will work also for a 8-neighborhood, by
> including the /all kw in the call):
>
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> FOR i = 1, n - 1 DO BEGIN
>   mxlb = MAX(limg)
>   climgi = climg EQ cl[i]
>   limg = TEMPORARY(limg) + (LABEL_REGION(climgi, /ULONG) +
>   climgi*maxlb)
> ENDFOR
>
```

> Where `climg` is your classified image and `cl` is an array of `n` elements
> containing the (numeric) labels of your classes. You might need to
> zero the frame of your image before doing this.
>
> Cheers
>
> Guillermo
>

Thanks, Guillermo. This is very elegant, and it's easier as you say.
Using Tal's method with `/all_neighbors` I was separating each class plane
in the 3D cube with an empty plane to keep the blobbing from jumping
across class boundaries. Any idea why the ENVI built-in doesn't work?

Mort

Subject: Re: Segmentation in ENVI
Posted by guillermo.castilla.ca on Wed, 10 Sep 2008 20:36:52 GMT
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> Any idea why the ENVI built-in doesn't work?

Well, I wouldn't say it doesn't work, it is simply intended to perform
a different task, namely to partition into homogeneous regions a grey-
level image. In your case (a classified image), you already have a
partition where each region is a set of connected pixels sharing a
common class. What you wanted to do is to single out the regions
within your classified image, which is different from what is usually
understood as 'segmentation'.

However, you are right in that the 'segmentation image' ENVI 'basic
tool' is too basic. First, it only handles one band at a time. And
second, it only produces a partial segmentation (only pixels that fall
within the entered DN range are considered). The good news is that new
ENVI Fx module tackles these deficiencies (and does way more than just
segmentation). The bad news is that you have to pay a separate fee for
it. However, there are other segmentation tools that you can get for
free in the ITTVIS codebank (e.g., my SCRM algorithm :).

Cheers

Guillermo

Subject: Re: Segmentation in ENVI
Posted by [Mort Canty](#) on Thu, 11 Sep 2008 07:30:27 GMT

guillermo.castilla.castellano@gmail.com schrieb:

>> Any idea why the ENVI built-in doesn't work?

>

> Well, I wouldn't say it doesn't work, it is simply intended to perform
> a different task, namely to partition into homogeneous regions a grey-
> level image. In your case (a classified image), you already have a
> partition where each region is a set of connected pixels sharing a
> common class. What you wanted to do is to single out the regions
> within your classified image, which is different from what is usually
> understood as 'segmentation'.
>

I wonder if we're talking about the same function. There are two
"Segmentation Image" commands in the ENVI main menu. The one I mean is

"Classification/Post Classification/Segmentation Image"

This command explicitly asks for an ENVI Classification Image and aborts
if you don't provide one. Then you can choose any combination (or all)
class labels and start segmenting. I think it should respect class
labels, otherwise it makes no sense (too me anyway). But it doesn't.

Cheers

Mort

Subject: Re: Segmentation in ENVI

Posted by guillermo.castilla.ca on Thu, 11 Sep 2008 15:26:24 GMT

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Hi Mort,

> I wonder if we're talking about the same function. There are two
> "Segmentation Image" commands in the ENVI main menu. The one I mean is
>
> "Classification/Post Classification/Segmentation Image"

Sorry, I wasn't aware that there was 'another' segmentation image tool
under 'post-classification'. You are right, if you select all classes
then a single segment is returned, not very useful indeed... My
suspicion is that the two 'segmentation image' tools are one and the
same. In the case of classified images, I think that the tool operates
in a binary image where pixels belonging to the selected classes are 1
and the rest are 0. This must be so, because in the ENVI help for this
item it says 'All the selected classes are combined before

segmenting'. To me this doesn't make sense either. Maybe you could send ITTVIS an email reporting this, so that in future versions they correct it.

Cheers

G
