Subject: IDL routine to fill in gaps in line? / Searching IDL routine libraries?

Posted by Robin Wilson on Tue, 18 Jan 2011 16:24:26 GMT

Hi all,

I've recently realised what a wealth of useful code is in the various
IDL routine libraries available on the internet. However, what I haven't
found is a very good way of searching them. For example, I would never
have learnt about the very useful COLLAPSE routine by Marc Buie if he
hadn't posted about it as a response to one of my questions here.

So, my question is two-fold:

1. Does anyone know of a routine in any of the IDL user-written
libraries that fills in gaps in a line on a binary image to make it a
full and complete line. For example, take in the following input (where
* is a nonzero element and . is a zero element):

```
. . * . . .
. . . . . .
. . * . . .
. . . . * .
. . . . * .
. . . . * .
```

And fill in the gaps to make a complete line like:

```
. . * . . .
. . * . . .
. . * . . .
. . * * * .
. . . . * .
. . . . * .
. . . . * .
```

2. I have a suspicion that the code I need to do the above is out there
somewhere. Does anyone have any particularly useful tips for searching
all of the IDL libraries on the internet to find routines you need?

Cheers,

Robin

PhD Student
University of Southampton, UK

Subject: Re: IDL routine to fill in gaps in line? / Searching IDL routine libraries?
Posted by pgrigis on Tue, 18 Jan 2011 18:37:59 GMT
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On Jan 18, 11:24 am, Robin Wilson <ro...@rtwilson.com> wrote:
> Hi all,
>
> I've recently realised what a wealth of useful code is in the various
> IDL routine libraries available on the internet. However, what I haven't
> found is a very good way of searching them. For example, I would never
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> libraries that fills in gaps in a line on a binary image to make it a
> full and complete line. For example, take in the following input (where
> * is a nonzero element and . is a zero element):
>
> . . * . . .
> . . . . . .
> . . * . . .
> . . . . * .
> . . . . * .
> . . . . * .
>
> And fill in the gaps to make a complete line like:
>
> . . * . . .
> . . * . . .
> . . * * * .
> . . . . * .
> . . . . * .
> . . . . * .

This is an ill-posed problem, as there is more then one
way in which you can connect the points. You should first think
on a more detailed prescription on how you want this to happen.
For instance, this would also be a possible solution:

```
. . * . . .
. . * . . .
. . * . . .
. . * * * .
. . . . * .
. . . . * .
```

Ciao,
Paolo

>
> 2. I have a suspicion that the code I need to do the above is out there
> somewhere. Does anyone have any particularly useful tips for searching
> all of the IDL libraries on the internet to find routines you need?
>
> Cheers,
>
> Robin
>
> -------
> PhD Student
> University of Southampton, UK

Subject: Re: IDL routine to fill in gaps in line? / Searching IDL routine libraries?
Posted by rogass on Tue, 18 Jan 2011 20:05:31 GMT

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On 18 Jan., 17:24, Robin Wilson <ro...@rtwilson.com> wrote:
> Hi all,
>
> I've recently realised what a wealth of useful code is in the various
> IDL routine libraries available on the internet. However, what I haven't
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> . . * . . .
> . . . . . .
> . . * . . .
> . . . . * .
> . . . . * .
> . . . . * .
>
> And fill in the gaps to make a complete line like:
>
> . . * . . .

```
> . . * . . .
> . . * * * .
> . . . . * .
> . . . . * .
> . . . . * .
>
```
> 2. I have a suspicion that the code I need to do the above is out there
> somewhere. Does anyone have any particularly useful tips for searching
> all of the IDL libraries on the internet to find routines you need?
>
> Cheers,
>
> Robin
>
> -------
> PhD Student
> University of Southampton, UK

Hi, for searching you might use this one: http://www.astro.washington.edu/docs/idl/htmlhelp/

As Paolo stated you have to define your problem more precisely.
However, it seems to me that you want to apply an algorithm which
searches on the one hand a tree and on the other hand an
interpolation. Maybe, you can try the following:

0. refine your problem
1. start at a random, boundary near data point
2. compute euclidic distances by 'distance_measure'
3. search for next data point and mark last one as visited
3.a) next data point distance greater than sqrt(2)->interpolate
missing data points of shortest path (incorporate all data points
which are close enough to some extend and not interpolated)
3.b) continue
4. 'Canny' and 'dilate' or 'erode' or 'thin' your data to remove
'spikes'

Cheers

CR