Subject: Re: connected component labeling problem in a graylevel image without background
Posted by Julia on Mon, 14 Oct 2002 20:19:20 GMT
View Forum Message <> Reply to Message

I am not quite familiar with watershed algorithm. But in my understanding, "considering the gray scale image
as a surface, each local minimum can be thought of as the point to which water falling on the surrounding
region drains. The boundaries of the watersheds lie on the tops of the ridges. This operator labels each
watershed region with a unique index, and sets the boundaries to zero. Typically, morphological gradients,
or images containing extracted edges are used for input to the watershed operator."

If I use watershed operator on the image, since it labels some pixels as boundaries, it will eliminate some regions
with one-pixel width and label them as boundaries. That is not what I want. Can watershed algorithm really solve this?

Regards,

Julia

"Karsten Rodenacker" <rodena@gsf.de> wrote in message news:3DAA67A8.EBDA82FD@gsf.de...
> Hmm, I followed not completely the thread, but what about using
> watershed? Its applicability depends on the homogeneity of the different
> phases of marble.
> Regards
> Karsten
>
> Julia schrieb:
>>
>> Yes, David, I think you've got the point.
>>
>>> How many marbles do I have
>>> with a gray-scale level of X?
>> Variable. A graylevel at most times corresponds to a marble. But
>> at some graylevels, maybe it has two, three or more marbles each graylevel.
>>
>>> but if you have N gray-levels and you have a tool that works with
>>> bi-level images only, don't you pretty much have to use
>>> your tool N times to get what you want?
>> Right, if we use label_region function which works only on binay image.
>> But I think if we know how they do label_region and extend the algorithm

on
>> the graylevel image,
>> maybe we only needs to trace the image less than twice.
>> I am not sure if this is practical.
>>
>> Cheers,
>>
>> Julia
>>
>> "David Fanning" <david@dfanning.com> wrote in message
>> news:MPG.1810ac85dd5a4b049899de@news.frii.com...
>>> Julia (julia65201@yahoo.com) writes:
>>>
>>>> But I think you kind of misunderstood my problem, maybe due to my
not
>> very
>>>> clear expression. :)
>>>>
>>>> > >" The problem is like a grayscale photograph of a jar of
>>>> > >marbles. Each marble is uniformly gray. All the marbles are
touching
>> each
>>>> > >other, so there is no
>>>> > >background. Two marbles of the same color may not belong to the
same
>>>> > >region.
>>>> > >I want to give a unique label to each marble/region."
>>>>
>>>> In my problem, all the marbles are touching each other, so there is
no
>>>> background there. I do not think I can use
>>>> label_region on the original image. So I do like this:
>>>> First, use HISTOGRAM to get a mask of regions at each gray level,
and
>> then
>>>> use LABEL_REGION on each mask.
>>>>
>>>> If there are n gray levels in the image, I need do label_region n
times.
>> I
>>>> think this is not very efficient. I am not sure if I can solve this
kind
>> of
>>>> problem more efficiently in IDL, I call it "connected component
labeling
>>>> problem in a graylevel image without background".
>>>>
>>>> Any suggestion there?

>>>
>>> I'd never be confused with a mathematician, but if you
>>> have N gray-levels and you have a tool that works with
>>> bi-level images only, don't you pretty much have to use
>>> your tool N times to get what you want? At least if I
>>> understand the question to be: How many marbles do I have
>>> with a gray-scale level of X?
>>>
>>> Cheers,
>>>
>>> David
>>>
>>> P.S. Let's just say I'd bet some good money even the
>>> HISTOGRAM function can't get us out of this one. :-)
>>>
>>> --
>>> David W. Fanning, Ph.D.
>>> Fanning Software Consulting, Inc.
>>> Phone: 970-221-0438, E-mail: david@dfanning.com
>>> Coyote's Guide to IDL Programming: http://www.dfanning.com/
>>> Toll-Free IDL Book Orders: 1-888-461-0155
>
> --
> Karsten Rodenacker ()
> ---------- ----------:
-)
> GSF - Forschungszentrum Institute of Biomathematics and Biometry
> D-85758 Oberschleissheim Postfach 11 29
> Tel: +49 89 31873401 | FAX: ...3369 | rodena@gsf.de |
> Karsten@Rodenacker.de
> http://www.gsf.de/ibb/homepages/rodenacker