Subject: Re: Thinning algorithm without for loops
Posted by nathan12343 on Wed, 08 Aug 2007 17:41:24 GMT
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On Aug 8, 1:33 am, Paolo_Grigis <pgri...@astro.phys.ethz.ch> wrote:
> [...]
>
>
>
>> This code implements the first iteration of Zhang-Suen thinning
>> without a single for loop!
>
> You are shifting "img" too many times... you only need to compute
> your neighbors values p1... p8 first, and then you can have the
> next statements use that values instead, for instance
>
> tot=p1+p2+...+p8
>
> and so on for the other conditions.
>
> Ciao,
> Paolo
>
>> PRO zsthin,img,thinimg
>
>> siz=size(img)
>
>> ;Array to hold the sums we're looking for
>> tot=lonarr(siz[1],siz[2])
>
>> tot+=shift(img,1,0)
>> tot+=shift(img,1,1)
>> tot+=shift(img,1,-1)
>> tot+=shift(img,0,1)
>> tot+=shift(img,0,-1)
>> tot+=shift(img,-1,0)
>> tot+=shift(img,-1,1)
>> tot+=shift(img,-1,-1)
>
>> cond3=intarr(siz[1],siz[2])
>
>> cond3[*,*]=1
>
>> cond3*=shift(img,1,0)
>> cond3*=shift(img,-1,0)
>> cond3*=shift(img,0,-1)
>
>> ;4. If P[1]*P[3]*P[5]=0

```
>
>>  cond4=intarr(siz[1],siz[2])
>>  cond4[*,*]=1
>
>>  cond4*=shift(img,0,1)
>>  cond4*=shift(img,1,0)
>>  cond4*=shift(img,0,-1)
>
>>  ;2. The number of 0-1 transitions in the ordered sequence
>>  ;P[1],P[2],...,P[8],P[1] Is exactly 1
>
>>  p1=shift(img,0,1)
>>  p2=shift(img,1,1)
>>  p3=shift(img,1,0)
>>  p4=shift(img,1,-1)
>>  p5=shift(img,0,-1)
>>  p6=shift(img,-1,-1)
>>  p7=shift(img,-1,0)
>>  p8=shift(img,-1,1)
>
>>  cond2=intarr(siz[1],siz[2])
>
>>   p=[[[p1]],[[p2]],[[p3]],[[p4]],[[p5]],[[p6]],[[p7]],[[p8]],[ [p1]]]
>
>>  FOR i=0,7 DO BEGIN
>>      wh=where(p[*,*,i] eq 0 AND p[*,*,i+1] eq 1)
>>      cond2[wh]+=1
>>  ENDFOR
>
>>  tvscl,cond2
>
>>  wh=where(cond2 eq 1)
>
>>  cond2[*,*]=0
>
>>  cond2[wh]=1
>
>>  wh=where(tot GE 2 AND tot LE 6 AND cond3 eq 0 AND cond4 eq 0 AND cond2
>>  eq 1)
>
>>  wh11=intarr(siz[1],siz[2])
>
>>  wh11[wh]=1
>
>>  newimg=img-wh11
>
>>  newimg>=0
>
```

>> END
>
>> I'll do the second subiteration in a bit, should be too hard.

You are correct, thanks for pointing that out!

-Nathan
