Subject: Re: Interpolation question
Posted by thompson on Thu, 26 Jul 2001 15:59:39 GMT
View Forum Message <> Reply to Message

rkj@dukebar.crml.uab.edu (R. Kyle Justice) writes:

> I have an image containg some bad values. I would like
> to replace these points with the average value of their
> neighbors. Is there an easy way to do this without loops?
>
> For instance, a 3x3 array as follows:
>
> 1 1 1
> 1 0 1
> 1 1 1
>
> would become
>
> 1 1 1
> 1 1 1
> 1 1 1.

One way to do this would be something like the following.

```
 SZ = SIZE(ARRAY)
 NX = SZ(1)
 NY = SZ(2)
 GOOD = ARRAY EQ ARRAY  ;Bad points are NaN
 TEMP = ARRAY*GOOD
 WBAD = WHERE(GOOD EQ 0, COUNT)
 IF COUNT GT 0 THEN BEGIN
     I = WBAD MOD NX
     J = WBAD / NX
     ARRAY[I,J] = (TEMP[I-1,J-1] + TEMP[I,J-1] + TEMP[I+1,J-1] + $
  TEMP[I-1,J] + TEMP[I+1,J] + TEMP[I-1,J+1] + TEMP[I,J+1] + $
  TEMP[I+1,J+1]) / (GOOD[I-1,J-1] + GOOD[I,J-1] + $
  GOOD[I+1,J-1] + GOOD[I-1,J] + GOOD[I+1,J] + GOOD[I-1,J+1] + $
  GOOD[I,J+1] + GOOD[I+1,J+1])
 ENDIF
```

> I can't get the boundary conditions to work correctly when
> I use CONVOL. It either zeros the edges or does not process
> them.

This doesn't really trip the boundary quite right either, because some points will be more heavily weighted than others. But it does get the job done. You can modify it with more WHERE() statements, to treat the points at the edges separately.

William Thompson