
Subject: Re: Median filter the hard way

Posted by [Dick Jackson](#) on Tue, 21 Oct 2003 22:52:28 GMT

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"JD Smith" <> wrote in message

news:pan.2003.10.17.22.22.14.73337.24537@as.arizona.edu...

> On Fri, 17 Oct 2003 14:34:30 -0700, Dick Jackson wrote:

>

>> Here's an array, a:

>>

>> IDL> a=Float(Byte(RandomU(seed,7,7)*10)) IDL>

a[2:4,2:4]=!values.F_nan

>

> [...]

>

>> The Convol function can be used to count up neighborhoods. If you need

>> better counting around the edge, you could pad the array before calling

>> Convol.

>>

>> IDL> print,Convol(Finite(a),Replicate(1B,3,3))

>

> Looks good, Dick. CONVOL's a bit heavy-handed for just counting: I'd use

> smooth instead:

>

> IDL> print,smooth(finite(a)*9,3,/EDGE_TRUNCATE)

>

> [...]

>

> Notice it treats edges better (as far as this problem is concerned),

Granted, if edge pixels are not going to be dropped anyway for having too few 'good' neighbors...

> and should definitely be faster.

A good guess, but in this case, I guess Convol can keep everything as Byte type and it is indeed faster:

```
IDL> a=Float(Byte(RandomU(seed,2000,2000)*10))
```

```
IDL> tstart&b=Convol(Finite(a),Replicate(1B,3,3))&treport  
0.510 seconds.
```

```
IDL> tstart&b=Convol(Finite(a),Replicate(1B,3,3))&treport  
0.510 seconds.
```

```
IDL> help,b
```

```
B      BYTE      = Array[2000, 2000]
```

```
IDL> tstart&b=smooth(finite(a)*9,3,/EDGE_TRUNCATE)&trepot t
0.681 seconds.
IDL> tstart&b=smooth(finite(a)*9,3,/EDGE_TRUNCATE)&trepot t
0.661 seconds.
IDL> help,b
B          INT      = Array[2000, 2000]
```

You may want these for testing:

=====

```
PRO TStart, msg ; Timer Start
; Save current time for use by TReport
COMMON Timer, t0
IF N_Elements(msg) NE 0 THEN Print, msg
t0 = SysTime(1)
END
```

```
PRO TReport, msg ; Timer Report
; Print elapsed time since last TStart
COMMON Timer, t0
IF N_Elements(msg) EQ 0 THEN msg = "
Print, Format='(A0, D10.3," seconds.)', msg, SysTime(1)-t0
END
```

=====

Cheers,
--
-Dick

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