Subject: I think my circular median filter is very inefficient
Posted by JRP on Sun, 03 Aug 2014 03:00:59 GMT
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Hi, I have written a circular median filter for removing noise from a noisy signal, which runs through a loop of radii (r=2 -> r=20) and then calculates a peak signal-noise ratio to determine which radius does well (this does not take long). I am by no means at all experienced in any kind of programming, so if anyone is able to offer me any assistance in reducing the time it would take me to do this it would be greatly appreciated! Here is the part of the median filter code:

```
for k=0,size3[1]-size2[1]-1 do begin
  for l=0,size3[2]-size2[2]-1 do begin
    for i=0, size2[1]-1 do begin
      for j=0, size2[2]-1 do begin

        holder[i,j] = (se[i,j]*padding[i+k,j+l])
        med = MEDIAN(holder)
        clean[k,l] = med

      endfor
    endfor

  endfor
endfor
```

Here, size2 is the size of the circular structuring element and size3 is the size of the padded noisy image. So basically I multiply the structuring element by the noisy image (which is padded), store in the values that fill the circle, then find the median and assign it to a "cleaned" image. Then the loop moves the structuring element 1 unit over...

At the moment, the program has done up to r=17, and has been running for 7.2 hours. I've been printing the time it takes for each radii to complete and it will take something like a further 5.5 hours to complete! :(

Cheers!