Subject: Re: Can this be done using array operations instead?
Posted by robintw on Thu, 02 Apr 2009 19:43:05 GMT
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Thank you everyone for your help. I've now managed to write a function to do this with array functions. I've put the code below if anyone is interested. I realised that all I really needed was the sum of the values, and I could do all the rest by arithmetic operations on the array itself.

However, the next part of this project will require using subarrays as I will need to get the Standard Deviation of each 3x3 square. Is there a way to do this?

Cheers,

Robin

Code Here:

```
; Creates a Getis image given a FID, the dimensions of the file, a
distance to use for the getis routine
; and a base window to send progress updates to
PRO CREATE_GETIS_IMAGE, file, dims, distance, report_base
  ; TODO: Get this to loop through bands
  ; Get the data for the first band of the file (ignores pos from
earlier)
  WholeBand = ENVI_GET_DATA(fid=file, dims=dims, pos=0)

  ; Calculate the dimensions of WholeBand
  SizeInfo = SIZE(WholeBand, /DIMENSIONS)
  NumRows = SizeInfo[0]
  NumCols = SizeInfo[1]

  ; Get the global mean
  GlobMean = MEAN(WholeBand)

  ; Get the global variance
  GlobVariance = VARIANCE(WholeBand)

  ; Get the number of values in the whole image
  GlobNumber = NumRows * NumCols

  DimOfArray = (distance * 2) + 1
  Kernel = FLTARR(DimOfArray, DimOfArray)
  Kernel = Kernel + 1
  print, Kernel
  SummedImage = CONVOL(FLOAT(WholeBand), Kernel, /CENTER, /EDGE_ZERO)
```

```
  TopFraction = SummedImage - (FLOAT(9) * GlobMean)

  SquareRootAnswer = SQRT((FLOAT(9) * (GlobNumber - 9))/(GlobNumber -
1))
  BottomFraction = GlobVariance * SquareRootAnswer

  Getis = FLOAT(TopFraction) / BottomFraction

  ENVI_ENTER_DATA, Getis

  print, "Program finished."
END
```
