Subject: Re: Help needed!!
Posted by Gray on Fri, 16 Apr 2010 17:53:33 GMT
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On Apr 16, 1:47 pm, Gray <grayliketheco...@gmail.com> wrote:
> On Apr 16, 12:40 pm, bala murugan <bala2...@gmail.com> wrote:
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>
>> On Apr 16, 10:33 am, pp <pp.pente...@gmail.com> wrote:
>
>>> On Apr 16, 1:18 pm, bala murugan <bala2...@gmail.com> wrote:
>
>>>> My aim is to do the following,
>
>>>> To write an IDL routine that takes as input the mean of a Poisson
>>>> distribution (fLambda = a floating point number >= 0.0) and a number
>>>> of realizations (N), and generates N samples from the Poisson
>>>> distribution with mean fLambda. The output samples should be provided
>>>> as a vector (list) of integers (each >= 0). I will also want to plot
>>>> a histogram of the samples (IDL probably has a built-in histogramming
>>>> routine).
>
>>>> My subroutine/program will look something like this...
>
>>>> piSamples = PoissonDist(fLambda, N)
>>>> piSamples = vector of N integer samples returned by the routine
>>>> fLambda = mean of the Poisson distribution
>>>> N = number of samples to generate
>
>>>> This routine will need to loop n = 1..N Each time through the loop,
>>>> it will need to call RANDOMU to get a random number between 0.0 and
>>>> 1.0. It will then need to call IMSL_POISSONCDF (probably repeatedly)
>>>> to determine which integer in the Poisson distribution corresponds to
>>>> the random number gotten from RANDOMU. This integer is then placed in
>>>> the output vector, etc.
>
>>>> I am not using IMSL_POISSONCDF. Rather I am calculating the poisson
>>>> probability myself.
>
>>>> Can you please help me with this?
>
>>> Better now, but you still did not say what the problem is. One problem
>>> that is obvious is the line
>
>>> if (x EQ r) THEN a[i]=j

>
>>> since neither a or i exist at that point. And that condition is
>>> probably never going to be true.
>
>> @pp
>
>> Can you please go through the summary of what I want to accomplish and
>> suggest me some method to do it?
>
> Well, one thing you should do is vectorize your code, otherwise
> there's no point in writing it in IDL. Take a look
athttp://www.dfanning.com/documents/tips.htmland read about the horrors
> of FOR loops.
>
> Your code can be written very simply, particularly since nothing is
> stopping your "poisson" routine from working on arrays.
>
> Probably what you are looking for is something like this:
>
> FUNCTION poissondist,fLambda,N
>   RETURN, POISSON(RANDOMU(SEED,N),fLambda)
> END
>
> Or... if you don't need the "POISSON" routine elsewhere, then:
>
> FUNCTION poissondist,fLambda,N
>   r = RANDOMU(SEED,N)
> RETURN, (fLambda^r)/(exp(fLambda)*factorial(r))
> END

Then, if you want, you can plot a histogram of an array "y" with:
h = histogram(y,binsize=<some binsize>,locations=loc)
PLOT, loc, h, psym=10
(or alternatively you can use PLOTHIST from NASA's astrolib, linked
above.)
