Subject: Re: Is there function about how to compute joint probability distribution?
Posted by msam04 on Sun, 13 Jan 2013 18:00:06 GMT
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On Tuesday, November 13, 2001 4:44:41 AM UTC-5, Kay wrote:
> Xiuying Wang <xiuying@cs.usyd.edu.au> wrote in message
news:<3BEF063B.46048EA1@cs.usyd.edu.au>...
>> Hi,
>> I am doing research work now and I need to use joint probability
>> distribution and marginal probability distribution. I wonder whether you
>> can tell me how to do that in the shortest time, please?
>> Many thanks!
>>
>> Best wishes,
>> Xiu Ying
>
> Hi,
> I´m using Mutual Information on 3D-Arrays, so there I need the
> JointProbability between the Intensities of both arrays.
> I´ve done this with the Hist_2D Function.
>
> Hist_2D gives the two dimensional density function ob both arrays. In
> words, it gives the number of corresponding Pixels which have certain
> intensities in eihter array (e.g. low intensity in A and high
> intensity in B,...)
>
> To get the joint probability I simply divided by the Total of the
> histogram.
>
> Here the part of my program for the mutual information
> ; mi, mutual information
>
> if imeasure eq 4 then begin
>
> hist = hist_2d(a, b)
> hist = rotate(hist,7)
> hist = float(hist)
>
> pxy = hist / total(hist)
> px = fltarr(256)
> py = fltarr(256)
>
> for j = 0, 255 do begin
> px(j) = total(pxy(j,*))
> py(j) = total(pxy(*,j))
> endfor
> col = replicate(1.0,256)
> px_mat = px # col

> py_mat = py # col
> py_mat = rotate(py_mat,1)
> pxxyy = px_mat * py_mat
> pxyn = pxy * 0.0
> index = where(pxxyy gt 0.0 and pxy gt 0.0, icount2)
> ;if (icount2 gt 0) then $
> pxyn[index] = pxy[index] * alog(pxy[index] / pxxyy[index]) /
> alog(2.0)
> mi = total(pxyn)
>
> endif
>
> I don´t know exactly how your problem looks like, but maybe this can
> help.
>
> Kay

Hi Kay,

Is there a reason for you to do the rotations? Wouldn't you get the mutual information without doing, first the rotation of hist and later the rotation of py_mat?

Thanks,
msam
