
Subject: Re: Fractional Pixels Origin?

Posted by [JD Smith](#) on Mon, 20 Feb 2006 18:56:18 GMT

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On Mon, 20 Feb 2006 10:00:03 +1300, Mark Hadfield wrote:

> Mark Hadfield wrote:

>>

>> my_image_plot, my_data, x, y

>

> Oops, sorry, JD. I missed an opportunity to gratuitously offend your
> sensibilities. The correct command would be

Thanks for that, Mark.

I don't see your argument. Fractional pixels are useful only when calculating things which relate pixel coordinates to some other coordinate (like celestial coordinates on the sky, etc), or when computing other derived fractional pixel positions (e.g. clip two polygons). Obviously, the computer has no understanding of a fractional pixel, but only the memory indexed offset [0,0]. But the latter does not have to drive the former. In fact I'd say it's rather strange to let the layout in memory dictate a physical coordinate system. You don't need to make this distinction.

An example: if you have an array of size 8x8, and it corresponds to, I don't know, electron mobility vs. viscosity, of course it doesn't bother you that the computer's understanding of the "coordinate" is the dumb and fixed integer set [0-7,0-7], and not your higher-level coordinate system of, say [0.001-0.1,100-200], in logarithmic bins. My recommendation puts pixel coordinate distance on the same footing as any other physical measure. How the underlying data is held in memory is immaterial.

So, perhaps if you consider two separate coordinate systems, things are made simpler (really!):

1. The "memory" coordinate system. This is the basis for mapping to any other coordinate system. You'll never get rid of it, since it's how the computer understands arrays.
2. The physical "pixel distance" coordinate system. This is among the physical systems which can be mapped to by #1 (trivially, by adding 0.5).

The first is a necessity, given how computers arrange data. The second is a particular choice, for computing distance/position based transformations.

My last argument is this: when you have a widget readout of fractional pixel position, do you really want [-0.5,-0.5] to be a valid position?

JD

P.S. Feel free to rename it JDTS_HIST_ND(). Much easier to remember.
