

Re: registration of spherical images

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- *From:* damo suzuki <liquidtree@xxxxxxxx>
 - *Date:* Wed, 30 Apr 2008 10:43:48 -0700 (PDT)
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On Apr 30, 3:31 pm, ImageAnalyst <imageanal...@xxxxxxxxxxxxxxxx> wrote:

On Apr 30, 5:21 am, damo suzuki <liquidt...@xxxxxxxx> wrote:

Are there techniques to register spherical images? Panning and tilting of the original images would actually correspond to simple shifts on the sphere, but what about roll?

damo:

Is it really a sphere, like you're trying to align two maps on a globe?

I'm not sure how to do it but I remember seeing these and perhaps a Mobius transformation or the Reimann sphere concept might be a lead that might help you.

http://en.wikipedia.org/wiki/M%C3%B6bius_transformation

Here's a really cool video that shows how you can take a spherical image and map it to a plane:

<http://www.youtube.com/watch?v=JX3VmDgiFnY>

The full version and more explanation is available at the professor's web site:<http://www.ima.umn.edu/~arnold/moebius/>

Then, once your spherical images have been mapped to the plane, maybe you can align the images in the plane using more traditional registration techniques, and then map back onto your sphere.

Regards,
ImageAnalyst

Thanks, I'll take a look. Basically what I'D LIKE TO DO, but maybe is not possible, is capture images from different views, remap them using spherical projection and then mosaic them. Since a computationally simple technique is what I'm looking for I was thinking about

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spherical projection because so I could easily take care of pan and tilt but don't know about roll. I don't think that on spheres a roll of the input image is still a simple rotation about the image center. Actually my panoramic technique is based on cylindrical warping but then I can "easily" compensate only for panning (shift on a cylinder). But I need something to compensate for roll.

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