Subject: Re: 3D Registration
Posted by Mike[2] on Wed, 10 Oct 2007 14:49:36 GMT
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On Oct 9, 11:48 am, Bita <rahm...@sbox.tugraz.at> wrote:
> I am looking for examples of the implementation of 3D registration by
> Roger Woods.
> I would like to implement it with Ratio Image Uniformity (RIU Cost
> Function) of woods in IDL.
>
> So far I have tried it with other methods but it didn't work out.
> Could you please check where the fault lies and eventually suggest a
> solution?

Could you be more specific about what didn't "work out"?

I use that objective function often for registering neuroimaging data,
but I do it by writing out my data and running AIR on it, rather than
reimplementing AIR in IDL. I've fiddled with using it for
registration with IDL, using tnmin (from mpfit) to minimize a number
of different cost functions, including Woods and mutual information,
but I still haven't put much effort into it. The complex part is not
the objective function, but the minimization.

My experience with the C version of AIR is that it can be quite
sensitive to the choice of thresholds and number of partitions - plus
you'll need good starting values for your registration parameters.
Here's how I'd code the objective function for a single partition in
each data set:

v1 = data set one, calculated using registration parameters
v2 = data set two, calculated using registration parameters
t1 = data set one threshold
t2 = data set two threshold

```
indeces = where((v1 gt t1) and (v2 gt t2), count)
if count gt 1 then begin
  ratio = v1[indeces]/v2[indeces]
  result = stdev(ratio)
endif else begin
  ratio = 0
endelse
```

Mike