
Algorithm 1: Self-Registration(E, T)

Input: E : the subject's epi sequence.

T : the subject's anatomical scan.

Result: E_T : the subject's epi sequence in anatomical space.

// FLIRT using local optimisation

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1  $T_b = bet(T, -f0.3 - R - B - S)$ 
2  $xfm1 = flirt(E, T_b, sch = 3dtrans.sch)$  // just does translations
3  $xfm2 = flirt(E, T_b, init = xfm1, sch = simple3d.sch)$  // gentle reshaping
4  $E_{local} = applyxfm(E, T_b, xfm2)$ 
5  $E_{bbr} = epiereg(E_{local}, T, T_b)$ 
6  $E_{bbr} = resample(E_{bbr}, T_b)$ 
```

Algorithm 2: Template-Registration(E, T, M)

Input: E : the subject's epi sequence in anatomical space.

T : the subject's anatomical scan.

M : the template; contains a *brain* and *mask* attribute, and M itself refers to the skull-on image.

Result: E_T : the subject's epi sequence in anatomical space.

// FNIRT using FLIRT initial guess

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1  $T_b = bet(T, -f0.3 - R - B - S)$ 
2  $xfm1 = flirt(E, T_b)$ 
3  $warp1 = fnirt(T, M, guess = xfm1, mask = M.mask)$ 
4  $E_{nonlin} = applywarp(E, M, guess = warp1)$ 
5  $E_{nonlin} = resample(E_{nonlin}, M_b)$ 
6  $T = resample(T, M_b)$ 
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