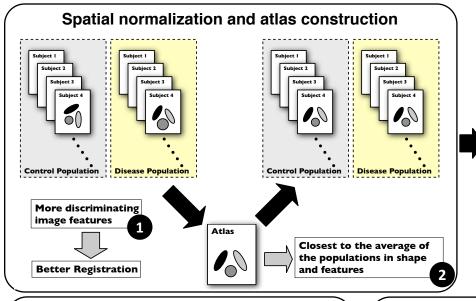
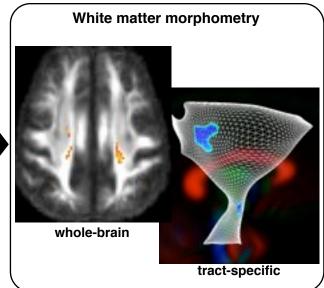


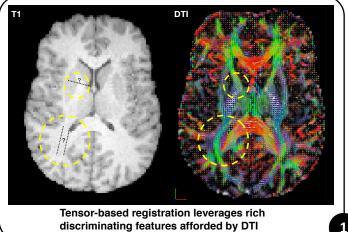
DTI ToolKit: A Spatial Normalization and Atlas Construction Toolkit Optimized for Examining White Matter Morphometry Using DTI Data.

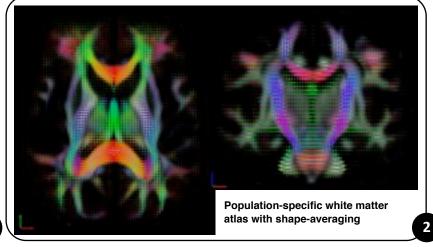
Hui Zhang, Paul A Yushkevich, and James C Gee
Penn Image Computing and Science Laboratory (PICSL), University of Pennsylvania











Binaries for Linux and Mac OS X Available at http://www.nitrc.org/projects/dtitk

Summary of Key Features:

- Open standard-based file IO support: NIfTI format for scalar, vector and tensor image volumes
- Tool chains for manipulating tensor image volumes: resampling, smoothing, warping, registration and visualization
- Pipelines for White Matter Morphometry: spatial normalization and atlas construction for population-based studies
- Built-in cluster-computing support via Sun Grid Engine
- Interoperability with other popular DTI tools: AFNI, Camino, FSL
- Interoperability with ITK-SNAP to support multi-modal segmentation

Coming soon:

- Interoperability with DTI Studio
- Tract-specific analysis [4]

Acknowledgement:

The authors gratefully acknowledge the support from NIH via the grants P30-NS045839, R01-EB006266, R01-DA022897, R21-NS061111, K25-AG027785, R03-EB008200, and R03-EB009321.

References:

- [1] Zhang et al. Deformable registration of diffusion tensor MR images with explicit orientation optimization. *Medical Image Analysis*, 10(5): 764-785, October 2006.
- [2] Zhang et al. Unbiased white matter atlas construction using diffusion tensor images. In *MICCAI*, volume 4792 of *LNCS*, pages 211-218, October 2007.
- [3] Zhang et al.. High-dimensional spatial normalization of diffusion tensor images improves the detection of white matter differences in amyotrophic lateral sclerosis. *IEEE Transactions on Medical Imaging*, 26(11):1585-1597, November 2007.
- [4] Yushkevich et al. Structure-specific statistical mapping of white matter tracts. *NeuroImage*, 41(2):448-461, June 2008.