

# Diffusion Tensor Imaging of the Brain & Tractography: Hints

July 11, 2017

You are expected to know the fundamentals of diffusion imaging, structure of a DTI scan, and the information that can be derived from it. The following are a few hints to give you an idea about what could be done around DTI.

1. Give a detailed analysis of how various parameters (e.g. *median\_radius*, denoising and reconstruction parameters etc.), chosen in the exercise, affect the process.
2. Explore other options in DiPy's **denoise**, **segment**, **reconstruct**, and **tracking** modules. Compare them with the ones in the exercise. Are there any better performers? Use more than one scan to evaluate performance or visualise results. Check the **viz** module out.
3. Refer to DiPy's examples: [github.com/nipy/dipy/tree/master/doc/examples](https://github.com/nipy/dipy/tree/master/doc/examples) for more ideas around reconstruction and tracking. Analyse the effect of various parameters chosen in these examples.