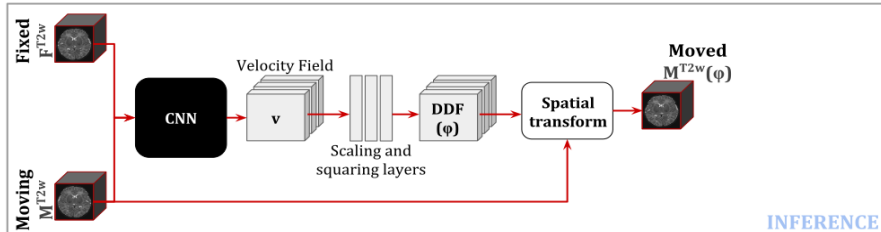
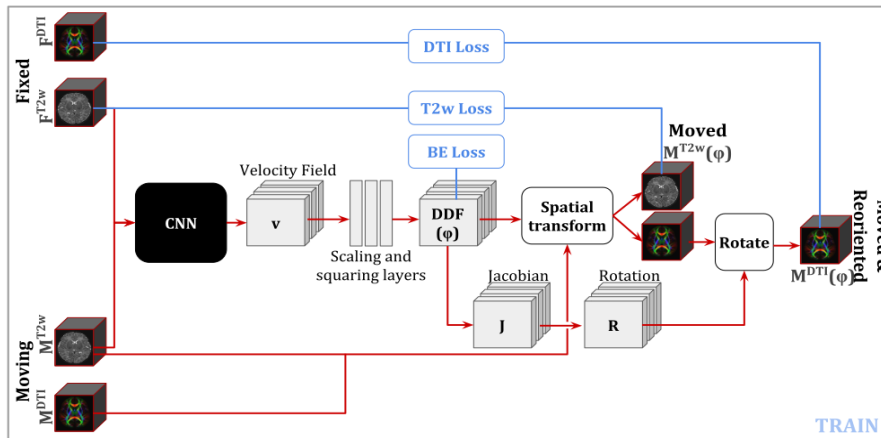


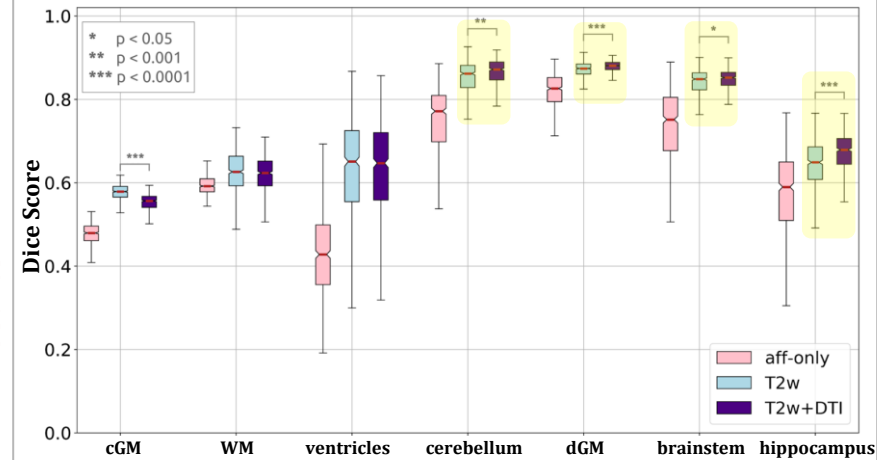
Diffusion tensor driven image registration: a deep learning approach

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Aim To develop a **deep learning registration** framework which **combines** the **structural information** provided by T2w images with the **microstructural information** offered by DTI scans.



Results



Method	Mean(SSD)	Std.Dev.(SSD)	p -value
Affine	1087	174	Affine vs T2w $1.5e^{-05}$
T2w	1044	168	Affine vs T2w+DTI $2.9e^{-24}$
T2w+DTI	981	181	T2w vs T2w+DTI $3.8e^{-10}$

Highlights

- The network can deal with **higher-order data**.
- During **inference**, our network **registers pairs of T2w images without** the need to provide **the extra DTI scans**.
- Our proposed network achieved **superior alignment** in **subcortical regions** and an improved alignment of **white matter tracts**.