Liver registration/segmentation*
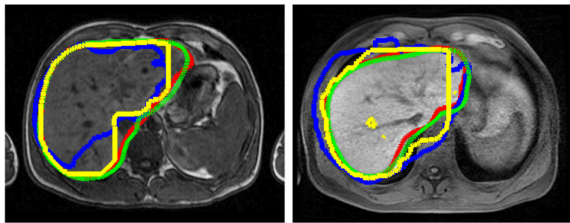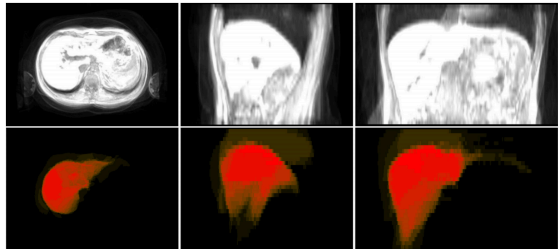

(a) Subject 1   (b) Subject 2

Lung: EMPIRE 10 Challenge

boundaries   fissures   landmarks   jacobian

- Register pairs of thoracic CT volumes
- Part of MICCAI 2010 Grand Challenges: http://empire10.isi.uu.nl
- First round offline competition finished on June 21, 2010
- ANTS by *picsl gsyn* : 1st place among 34 teams

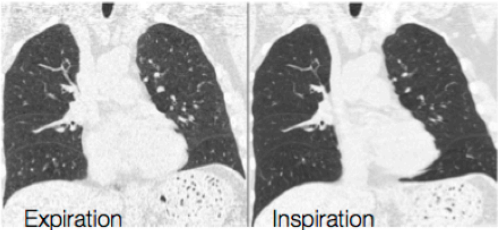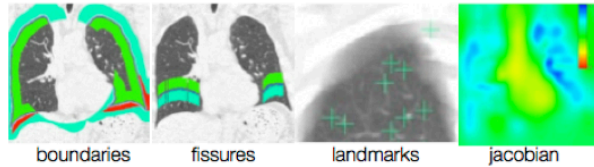| Team Name	Lung Boundaries		Fissures		Landmarks		Folding		Overall		Placed	Last Update	Method Type
	Avg Score	Avg Rank	Avg Score	Avg Rank	Avg Score	Avg Rank	Avg Score	Avg Rank	Avg Score	Avg Rank			
picsl gsyn	0.12	8.00	0.03	9.52	0.75	3.65	0.00	13.77		8.73	1	25 Jun 2010	Fully Auto.
Nifty Reggers	0.00	7.57	0.27	12.30	0.75	7.25	0.00	12.50		9.90	2	26 Jun 2010	Fully Auto
Iowa sstvd												26 Jun	Fully

7,000+ *multivariate* registrations

Multiple modality canine MRI: segmentation

Heart: 13,000+ 4D registrations

Brain tumor segmentation

BRATS 2013 challenge results

FLAIR   FLAIR with tumor labels

301   302   303
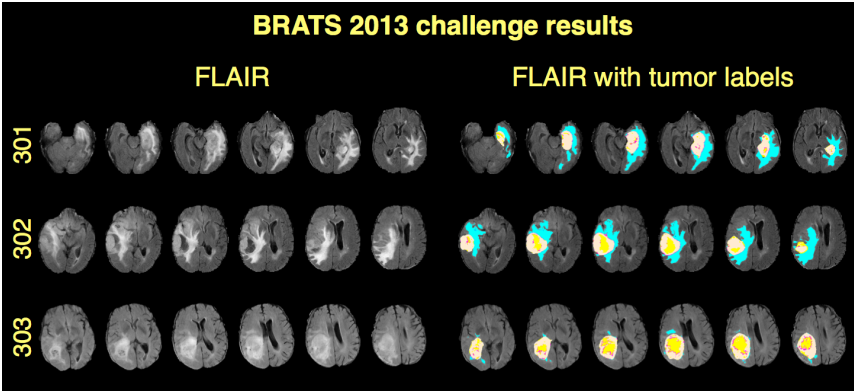
Patient

Position	User	Dice			Positive Predictive Value			Sensitivity			Kappa	Complete tumor Rank	Tumor core Rank	Enhancing tumor Rank
		complete	core	enhancing	complete	core	enhancing	complete	core	enhancing				
1	Nick Tustison	0.87 (1)	0.78 (1)	0.74 (1)	0.85 (2)	0.74 (4)	0.69 (4)	0.89 (2)	0.88 (1)	0.83 (1)	0.99 (1)	1.67	2.00	1.89
2	Raphael Meier	0.82 (5)	0.73 (2)	0.69 (3)	0.76 (6)	0.78 (2)	0.71 (1)	0.92 (1)	0.72 (4)	0.73 (3)	0.99 (4)	4.00	2.67	3.00
3	Syed Reza	0.83 (4)	0.72 (3)	0.72 (2)	0.82 (3)	0.81 (1)	0.70 (3)	0.86 (5)	0.69 (6)	0.76 (2)	0.99 (3)	4.00	3.33	3.22
4	Liang Zhao	0.84 (3)	0.70 (4)	0.65 (5)	0.80 (4)	0.67 (5)	0.65 (6)	0.89 (3)	0.79 (3)	0.70 (4)	0.99 (5)	3.33	4.00	4.11
5	Nicolas Cordier	0.84 (2)	0.68 (5)	0.65 (6)	0.88 (1)	0.63 (6)	0.68 (5)	0.81 (6)	0.82 (2)	0.66 (6)	0.99 (2)	3.00	4.33	4.33
6	Joana Festa	0.72 (6)	0.66 (6)	0.67 (4)	0.77 (5)	0.77 (3)	0.70 (2)	0.72 (7)	0.60 (7)	0.70 (5)	0.98 (6)	6.00	5.33	5.00
7	Senan Doyle	0.71 (7)	0.46 (7)	0.52 (7)	0.66 (7)	0.38 (7)	0.58 (7)	0.87 (4)	0.70 (5)	0.55 (7)	0.98 (7)	6.00	6.33	6.44