Nicholas Ayache

List of Publications by Citations

49 papers	6,746 citations	34 h-index	52 g-index
52 ext. papers	7,655 ext. citations	6.2 avg, IF	5.66 L-index

#	Paper	IF	Citations
49	Diffeomorphic demons: efficient non-parametric image registration. *NeuroImage*, **2009**, 45, S61-72	7.9	935
48	A Riemannian Framework for Tensor Computing. *International Journal of Computer Vision*, **2006**, 66, 41-66	10.6	871
47	Log-Euclidean metrics for fast and simple calculus on diffusion tensors. *Magnetic Resonance in Medicine*, **2006**, 56, 411-21	4.4	751
46	Geometric Means in a Novel Vector Space Structure on Symmetric Positive-Definite Matrices. *SIAM Journal on Matrix Analysis and Applications*, **2007**, 29, 328-347	1.5	441
45	Evaluation of registration methods on thoracic CT: the EMPIRE10 challenge. *IEEE Transactions on Medical Imaging*, **2011**, 30, 1901-20	11.7	311
44	A hybrid elastic model for real-time cutting, deformations, and force feedback for surgery training and simulation. *Visual Computer*, **2000**, 16, 437-452	2.3	293
43	Model-Based Detection of Tubular Structures in 3D Images. *Computer Vision and Image Understanding*, **2000**, 80, 130-171	4.3	289
42	Spherical demons: fast diffeomorphic landmark-free surface registration. *IEEE Transactions on Medical Imaging*, **2010**, 29, 650-68	11.7	252
41	Rigid, affine and locally affine registration of free-form surfaces. *International Journal of Computer Vision*, **1996**, 18, 99-119	10.6	221
40	Clinical DT-MRI estimation, smoothing, and fiber tracking with log-Euclidean metrics. *IEEE Transactions on Medical Imaging*, **2007**, 26, 1472-82	11.7	175
39	Iconic feature based nonrigid registration: the PASHA algorithm. *Computer Vision and Image Understanding*, **2003**, 89, 272-298	4.3	168
38	Non-linear anisotropic elasticity for real-time surgery simulation. *Graphical Models*, **2003**, 65, 305-321	0.9	162
37	Human atlas of the cardiac fiber architecture: study on a healthy population. *IEEE Transactions on Medical Imaging*, **2012**, 31, 1436-47	11.7	144
36	Automatic detection and segmentation of evolving processes in 3D medical images: Application to multiple sclerosis. *Medical Image Analysis*, **2002**, 6, 163-79	15.4	139
35	iLogDemons: A Demons-Based Registration Algorithm for Tracking Incompressible Elastic Biological Tissues. *International Journal of Computer Vision*, **2011**, 92, 92-111	10.6	127
34	A scheme for automatically building three-dimensional morphometric anatomical atlases: application to a skull atlas. *Medical Image Analysis*, **1998**, 2, 37-60	15.4	122
33	A collaborative resource to build consensus for automated left ventricular segmentation of cardiac MR images. *Medical Image Analysis*, **2014**, 18, 50-62	15.4	113

32	A computational framework for the statistical analysis of cardiac diffusion tensors: application to a small database of canine hearts. *IEEE Transactions on Medical Imaging*, **2007**, 26, 1500-14	11.7	98
31	Smoothing and matching of 3-d space curves. *International Journal of Computer Vision*, **1994**, 12, 79-104	10.6	86
30	Toward a comprehensive framework for the spatiotemporal statistical analysis of longitudinal shape data. *International Journal of Computer Vision*, **2013**, 103, 22-59	10.6	85
29	A Fast and Log-Euclidean Polyaffine Framework for Locally Linear Registration. *Journal of Mathematical Imaging and Vision*, **2009**, 33, 222-238	1.6	76
28	DT-REFinD: diffusion tensor registration with exact finite-strain differential. *IEEE Transactions on Medical Imaging*, **2009**, 28, 1914-28	11.7	73
27	Registration, atlas estimation and variability analysis of white matter fiber bundles modeled as currents. *NeuroImage*, **2011**, 55, 1073-90	7.9	69
26	Tracking points on deformable objects using curvature information. *Lecture Notes in Computer Science*, **1992**, 458-466	0.9	66
25	Spectral Log-Demons: Diffeomorphic Image Registration with Very Large Deformations. *International Journal of Computer Vision*, **2014**, 107, 254-271	10.6	65
24	3D tomographic reconstruction of coronary arteries using a precomputed 4D motion field. *Physics in Medicine and Biology*, **2004**, 49, 2197-208	3.8	65
23	Geometric variability of the scoliotic spine using statistics on articulated shape models. *IEEE Transactions on Medical Imaging*, **2008**, 27, 557-68	11.7	63
22	Soft Tissue Modeling for Surgery Simulation. *Handbook of Numerical Analysis*, **2004**, 12, 453-550	1	59
21	Registration of 4D cardiac CT sequences under trajectory constraints with multichannel diffeomorphic demons. *IEEE Transactions on Medical Imaging*, **2010**, 29, 1351-68	11.7	58
20	Inferring brain variability from diffeomorphic deformations of currents: an integrative approach. *Medical Image Analysis*, **2008**, 12, 626-37	15.4	58
19	Measuring brain variability by extrapolating sparse tensor fields measured on sulcal lines. *NeuroImage*, **2007**, 34, 639-50	7.9	53
18	Isotropic Energies, Filters and Splines for Vector Field Regularization. *Journal of Mathematical Imaging and Vision*, **2004**, 20, 251-265	1.6	40
17	Uniform Distribution, Distance and Expectation Problems for Geometric Features Processing. *Journal of Mathematical Imaging and Vision*, **1998**, 9, 49-67	1.6	37
16	Landmark-Based Registration Using Features Identified Through Differential Geometry **2000**, 499-513		35
15	Hepatic surgery simulation. *Communications of the ACM*, **2005**, 48, 31-36	2.5	29

14	Measuring brain variability via sulcal lines registration: a diffeomorphic approach **2007**, 10, 675-82		20
13	Directional anisotropic diffusion applied to segmentation of vessels in 3D images. *Lecture Notes in Computer Science*, **1997**, 345-348	0.9	20
12	Spectral Demons Image Registration via Global Spectral Correspondence. *Lecture Notes in Computer Science*, **2012**, 30-44	0.9	11
11	Towards a statistical atlas of cardiac fiber structure. *Lecture Notes in Computer Science*, **2006**, 9, 297-304	0.9	9
10	Statistical Atlas of Human Cardiac Fibers: Comparison with Abnormal Hearts. *Lecture Notes in Computer Science*, **2012**, 207-213	0.9	9
9	Lanalyse automatique des images mdicales Eat de lart et perspectives. *Annales De Linstitut Pasteur / Actualit*, **1998**, 9, 13-21		5
8	Propagation of Myocardial Fibre Architecture Uncertainty on Electromechanical Model Parameter Estimation: A Case Study. *Lecture Notes in Computer Science*, **2015**, 448-456	0.9	5
7	4D deformation field of coronary arteries from monoplane rotational X-ray angiography. *International Congress Series*, **2003**, 1256, 1073-1078		4
6	4-D Tomographic Representation of Coronary Arteries from One Rotational X-Ray Sequence. *Lecture Notes in Computer Science*, **2003**, 416-423	0.9	3
5	Registration of a curve on a surface using differential properties. *Lecture Notes in Computer Science*, **1994**, 187-192	0.9	3
4	Statistical Comparison of Cardiac Fibre Architectures **2007**, 413-423		3
3	Medical image analysis and simulation. *Lecture Notes in Computer Science*, **1997**, 4-17	0.9	3
2	Learning a Generative Motion Model From Image Sequences Based on a Latent Motion Matrix. *IEEE Transactions on Medical Imaging*, **2021**, 40, 1405-1416	11.7	2
1	Computational Anatomy and Computational Physiology for Medical Image Analysis. *Lecture Notes in Computer Science*, **2005**, 1-2	0.9	1