Brian B Avants

List of Publications by Year in descending order

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153 papers 28,742 citations

56 h-index 134 g-index

166 all docs

166 docs citations

166 times ranked 26749 citing authors

#	Article	IF	CITATIONS
1	Hierarchyâ€guided neural network for species classification. Methods in Ecology and Evolution, 2022, 13, 642-652.	5.2	3
2	Similarity-driven multi-view embeddings from high-dimensional biomedical data. Nature Computational Science, 2021, 1, 143-152.	8.0	16
3	The ANTsX ecosystem for quantitative biological and medical imaging. Scientific Reports, 2021, 11, 9068.	3.3	81
4	Image†versus histogramâ€based considerations in semantic segmentation of pulmonary hyperpolarized gas images. Magnetic Resonance in Medicine, 2021, 86, 2822-2836.	3.0	6
5	Functional and Structural Neuroimaging Correlates of Repetitive Low-Level Blast Exposure in Career Breachers. Journal of Neurotrauma, 2020, 37, 2468-2481.	3.4	35
6	Deep Volumetric Feature Encoding forÂBiomedical Images. Lecture Notes in Computer Science, 2020, , 91-100.	1.3	2
7	Impact of Reference and Target Region Selection on Amyloid PET SUV Ratios in the Phase 1b PRIME Study of Aducanumab. Journal of Nuclear Medicine, 2019, 60, 100-106.	5.0	43
8	Longitudinal Mapping of Cortical Thickness Measurements: An Alzheimer's Disease Neuroimaging Initiative-Based Evaluation Study. Journal of Alzheimer's Disease, 2019, 71, 165-183.	2.6	31
9	Small Animal Multivariate Brain Analysis (SAMBA) – a High Throughput Pipeline with a Validation Framework. Neuroinformatics, 2019, 17, 451-472.	2.8	42
10	Learning image-based spatial transformations via convolutional neural networks: A review. Magnetic Resonance Imaging, 2019, 64, 142-153.	1.8	30
11	Neuroconductor: an R platform for medical imaging analysis. Biostatistics, 2019, 20, 218-239.	1.5	43
12	Multivariate MR biomarkers better predict cognitive dysfunction in mouse models of Alzheimer's disease. Magnetic Resonance Imaging, 2019, 60, 52-67.	1.8	16
13	Convolutional Neural Networks with Template-Based Data Augmentation for Functional Lung Image Quantification. Academic Radiology, 2019, 26, 412-423.	2.5	51
14	Amyloid beta–positive subjects exhibit longitudinal network-specific reductions in spontaneous brain activity. Neurobiology of Aging, 2019, 74, 191-201.	3.1	6
15	Improved accuracy of lesion to symptom mapping with multivariate sparse canonical correlations. Neuropsychologia, 2018, 115, 154-166.	1.6	145
16	Convolutional Neural Networks for Rapid and Simultaneous Brain Extraction and Tissue Segmentation. Neuromethods, 2018, , 13-34.	0.3	5
17	Relating High-Dimensional Structural Networks to Resting Functional Connectivity with Sparse Canonical Correlation Analysis for Neuroimaging. Neuromethods, 2018, , 89-104.	0.3	1
18	Age-Related Effects and Sex Differences in Gray Matter Density, Volume, Mass, and Cortical Thickness from Childhood to Young Adulthood. Journal of Neuroscience, 2017, 37, 5065-5073.	3.6	235

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19	Enhanced estimations of postâ€stroke aphasia severity using stacked multimodal predictions. Human Brain Mapping, 2017, 38, 5603-5615.	3.6	63
20	A population level atlas of <i>Mus musculus</i> craniofacial skeleton and automated imageâ€based shape analysis. Journal of Anatomy, 2017, 231, 433-443.	1.5	28
21	Multi-template analysis of human perirhinal cortex in brain MRI: Explicitly accounting for anatomical variability. Neurolmage, 2017, 144, 183-202.	4.2	30
22	Arterial spin labeling perfusion predicts longitudinal decline in semantic variant primary progressive aphasia. Journal of Neurology, 2016, 263, 1927-1938.	3.6	23
23	Effect of socioeconomic status (<scp>SES</scp>) disparity on neural development in female Africanâ€American infants at age 1Âmonth. Developmental Science, 2016, 19, 947-956.	2.4	75
24	White matter hyperintensities are more highly associated with preclinicalÂAlzheimer's disease than imaging and cognitive markers ofÂneurodegeneration. Alzheimer's and Dementia: Diagnosis, Assessment and Disease Monitoring, 2016, 4, 18-27.	2.4	71
25	Automated segmentation of chronic stroke lesions using <scp>LINDA</scp> : Lesion identification with neighborhood data analysis. Human Brain Mapping, 2016, 37, 1405-1421.	3.6	119
26	High-density three-dimensional localization microscopy across large volumes. Nature Methods, 2016, 13, 359-365.	19.0	262
27	The pediatric template of brain perfusion. Scientific Data, 2015, 2, 150003.	5.3	53
28	Neuroinformatics and the The Insight ToolKit. Frontiers in Neuroinformatics, 2015, 9, 5.	2.5	5
29	The Multimodal Brain Tumor Image Segmentation Benchmark (BRATS). IEEE Transactions on Medical Imaging, 2015, 34, 1993-2024.	8.9	3,589
30	Eigenanatomy: Sparse dimensionality reduction for multi-modal medical image analysis. Methods, 2015, 73, 43-53.	3.8	15
31	Neuropsychological Testing Predicts Cerebrospinal Fluid Amyloid-β in Mild Cognitive Impairment. Journal of Alzheimer's Disease, 2015, 46, 901-912.	2.6	21
32	Predicting the laterality of temporal lobe epilepsy from PET, MRI, and DTI: A multimodal study. Neurolmage: Clinical, 2015, 9, 20-31.	2.7	40
33	Optimal Symmetric Multimodal Templates and Concatenated Random Forests for Supervised Brain Tumor Segmentation (Simplified) with ANTsR. Neuroinformatics, 2015, 13, 209-225.	2.8	221
34	Evaluation of automatic neonatal brain segmentation algorithms: The NeoBrainS12 challenge. Medical Image Analysis, 2015, 20, 135-151.	11.6	85
35	Decomposing cerebral blood flow MRI into functional and structural components: A non-local approach based on prediction. Neurolmage, 2015, 105, 156-170.	4.2	13
36	Relation of Childhood Home Environment to Cortical Thickness in Late Adolescence: Specificity of Experience and Timing. PLoS ONE, 2015, 10, e0138217.	2.5	32

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37	The Insight ToolKit image registration framework. Frontiers in Neuroinformatics, 2014, 8, 44.	2.5	462
38	Cortical parcellation for neonatal brains. , 2014, , .		2
39	The power of neuroimaging biomarkers for screening frontotemporal dementia. Human Brain Mapping, 2014, 35, 4827-4840.	3 . 6	48
40	Sparse canonical correlation analysis relates network-level atrophy to multivariate cognitive measures in a neurodegenerative population. Neurolmage, 2014, 84, 698-711.	4.2	73
41	Logical circularity in voxelâ€based analysis: Normalization strategy may induce statistical bias. Human Brain Mapping, 2014, 35, 745-759.	3.6	39
42	Genetic and neuroanatomic associations in sporadic frontotemporal lobar degeneration. Neurobiology of Aging, 2014, 35, 1473-1482.	3.1	43
43	Histology-derived volumetric annotation of the human hippocampal subfields in postmortem MRI. Neurolmage, 2014, 84, 505-523.	4.2	133
44	Relating brain anatomy and cognitive ability using a multivariate multimodal framework. Neurolmage, 2014, 99, 477-486.	4.2	29
45	Large-scale evaluation of ANTs and FreeSurfer cortical thickness measurements. NeuroImage, 2014, 99, 166-179.	4.2	560
46	Subject-specific functional parcellation via Prior Based Eigenanatomy. Neurolmage, 2014, 99, 14-27.	4.2	13
47	Automatic Clustering and Thickness Measurement of Anatomical Variants of the Human Perirhinal Cortex. Lecture Notes in Computer Science, 2014, 17, 81-88.	1.3	9
48	Single-Subject Structural Networks with Closed-Form Rotation Invariant Matching Improve Power in Developmental Studies of the Cortex. Lecture Notes in Computer Science, 2014, 17, 137-144.	1.3	1
49	Reproducibility of functional network metrics and network structure: A comparison of task-related BOLD, resting ASL with BOLD contrast, and resting cerebral blood flow. Cognitive, Affective and Behavioral Neuroscience, 2013, 13, 627-640.	2.0	16
50	Anatomically-Constrained PCA for Image Parcellation. , 2013, , .		2
51	Can MRI screen for CSF biomarkers in neurodegenerative disease?. Neurology, 2013, 80, 132-138.	1.1	21
52	Statistical bias in optimized VBM., 2013,,.		1
53	Longitudinal assessment of treatment effects on pulmonary ventilation using $1H/3He\ MRI\ multivariate\ templates.$, $2013,$, .		0
54	Regional and Hemispheric Variation in Cortical Thickness in Chimpanzees (<i>Pan troglodytes</i>). Journal of Neuroscience, 2013, 33, 5241-5248.	3.6	30

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55	White matter imaging helps dissociate tau from TDP-43 in frontotemporal lobar degeneration. Journal of Neurology, Neurosurgery and Psychiatry, 2013, 84, 949-955.	1.9	82
56	The ANTs cortical thickness processing pipeline. Proceedings of SPIE, 2013, , .	0.8	24
57	Associations between children's socioeconomic status and prefrontal cortical thickness. Developmental Science, 2013, 16, 641-652.	2.4	198
58	Methodological considerations in longitudinal morphometry of traumatic brain injury. Frontiers in Human Neuroscience, 2013, 7, 52.	2.0	8
59	Explicit B-spline regularization in diffeomorphic image registration. Frontiers in Neuroinformatics, 2013, 7, 39.	2.5	193
60	Instrumentation bias in the use and evaluation of scientific software: recommendations for reproducible practices in the computational sciences. Frontiers in Neuroscience, 2013, 7, 162.	2.8	28
61	Predicting Cognitive Data from Medical Images Using Sparse Linear Regression. Lecture Notes in Computer Science, 2013, 23, 86-97.	1.3	25
62	Fusing Functional Signals by Sparse Canonical Correlation Analysis Improves Network Reproducibility. Lecture Notes in Computer Science, 2013, 16, 635-642.	1.3	4
63	Partial sparse canonical correlation analysis (PSCCA) for population studies in medical imaging. , 2012,		1
64	A Digital Atlas of the Dog Brain. PLoS ONE, 2012, 7, e52140.	2.5	85
65	4-D segmentation and normalization of 3He MR images for intrasubject assessment of ventilated lung volumes. Proceedings of SPIE, 2012, , .	0.8	0
66	Longitudinal Reproducibility and Accuracy of Pseudo-Continuous Arterial Spin–labeled Perfusion MR Imaging in Typically Developing Children. Radiology, 2012, 263, 527-536.	7.3	86
67	Deficits in concept formation in amyotrophic lateral sclerosis Neuropsychology, 2012, 26, 422-429.	1.3	38
68	Reconstruction of the human hippocampus in 3D from histology and high-resolution ex-vivo MRI., 2012, 294-297.		7
69	Agreement between the white matter connectivity based on the tensor-based morphometry and the volumetric white matter parcellations based on diffusion tensor imaging. , 2012, , .		20
70	From label fusion to correspondence fusion: A new approach to unbiased groupwise registration. , 2012, , 956-963.		14
71	Sentence processing in Lewy body spectrum disorder: The role of working memory. Brain and Cognition, 2012, 78, 85-93.	1.8	18
72	Measuring longitudinal change in the hippocampal formation from in vivo high-resolution T2-weighted MRI. Neurolmage, 2012, 60, 1266-1279.	4.2	35

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73	Quantitative mouse brain phenotyping based on single and multispectral MR protocols. NeuroImage, 2012, 63, 1633-1645.	4.2	31
74	"Nonparametric Local Smoothing―is not image registration. BMC Research Notes, 2012, 5, 610.	1.4	2
75	Learning from open source software projects to improve scientific review. Frontiers in Computational Neuroscience, 2012, 6, 18.	2.1	24
76	Robust Automated Amygdala Segmentation via Multi-Atlas Diffeomorphic Registration. Frontiers in Neuroscience, 2012, 6, 166 .	2.8	28
77	Structural Variations in Prefrontal Cortex Mediate the Relationship between Early Childhood Stress and Spatial Working Memory. Journal of Neuroscience, 2012, 32, 7917-7925.	3.6	192
78	Diffeomorphic Directly Manipulated Free-Form Deformation Image Registration via Vector Field Flows. Lecture Notes in Computer Science, 2012, , 31-39.	1.3	3
79	Eigenanatomy Improves Detection Power for Longitudinal Cortical Change. Lecture Notes in Computer Science, 2012, 15, 206-213.	1.3	15
80	A learning-based wrapper method to correct systematic errors in automatic image segmentation: Consistently improved performance in hippocampus, cortex and brain segmentation. NeuroImage, 2011, 55, 968-985.	4.2	162
81	A reproducible evaluation of ANTs similarity metric performance in brain image registration. Neurolmage, 2011, 54, 2033-2044.	4.2	3,535
82	Some is not enough: Quantifier comprehension in corticobasal syndrome and behavioral variant frontotemporal dementia. Neuropsychologia, 2011, 49, 3532-3541.	1.6	22
83	Medial temporal structures and memory functions in adolescents with heavy cannabis use. Journal of Psychiatric Research, 2011, 45, 1055-1066.	3.1	210
84	Topological Well-Composedness and Glamorous Glue: A Digital Gluing Algorithm for Topologically Constrained Front Propagation. IEEE Transactions on Image Processing, 2011, 20, 1756-1761.	9.8	16
85	Evaluation of Registration Methods on Thoracic CT: The EMPIRE10 Challenge. IEEE Transactions on Medical Imaging, 2011, 30, 1901-1920.	8.9	363
86	An Open Source Multivariate Framework for n-Tissue Segmentation with Evaluation on Public Data. Neuroinformatics, 2011, 9, 381-400.	2.8	515
87	Ventilationâ€based segmentation of the lungs using hyperpolarized ³ He MRI. Journal of Magnetic Resonance Imaging, 2011, 34, 831-841.	3.4	59
88	Structural connectivity via the tensor-based morphometry. , 2011, , .		20
89	N4ITK: Improved N3 Bias Correction. IEEE Transactions on Medical Imaging, 2010, 29, 1310-1320.	8.9	4,205
90	The role of ventral medial prefrontal cortex in social decisions: Converging evidence from fMRI and frontotemporal lobar degeneration. Neuropsychologia, 2010, 48, 3505-3512.	1.6	67

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91	Speech errors in progressive non-fluent aphasia. Brain and Language, 2010, 113, 13-20.	1.6	104
92	Estimation of perfusion and arterial transit time in myocardium using freeâ€breathing myocardial arterial spin labeling with navigatorâ€echo. Magnetic Resonance in Medicine, 2010, 64, 1289-1295.	3.0	41
93	Resting Cerebral Blood Flow Alterations in Chronic Traumatic Brain Injury: An Arterial Spin Labeling Perfusion fMRI Study. Journal of Neurotrauma, 2010, 27, 1399-1411.	3.4	120
94	Hierarchical Organization of Scripts: Converging Evidence from fMRI and Frontotemporal Degeneration. Cerebral Cortex, 2010, 20, 2453-2463.	2.9	40
95	Early Stress Is Associated with Alterations in the Orbitofrontal Cortex: A Tensor-Based Morphometry Investigation of Brain Structure and Behavioral Risk. Journal of Neuroscience, 2010, 30, 7466-7472.	3.6	367
96	Evaluation of volume-based and surface-based brain image registration methods. NeuroImage, 2010, 51, 214-220.	4.2	237
97	Nearly automatic segmentation of hippocampal subfields in in vivo focal T2-weighted MRI. NeuroImage, 2010, 53, 1208-1224.	4.2	222
98	Early parental care is important for hippocampal maturation: Evidence from brain morphology in humans. Neurolmage, 2010, 49, 1144-1150.	4.2	156
99	The optimal template effect in hippocampus studies of diseased populations. NeuroImage, 2010, 49, 2457-2466.	4.2	605
100	Bias in estimation of hippocampal atrophy using deformation-based morphometry arises from asymmetric global normalization: An illustration in ADNI 3 T MRI data. NeuroImage, 2010, 50, 434-445.	4.2	116
101	Dementia induces correlated reductions in white matter integrity and cortical thickness: A multivariate neuroimaging study with sparse canonical correlation analysis. NeuroImage, 2010, 50, 1004-1016.	4.2	163
102	Standing on the Shoulders of Giants: Improving Medical Image Segmentation via Bias Correction. Lecture Notes in Computer Science, 2010, 13, 105-112.	1.3	5
103	Sparse Unbiased Analysis of Anatomical Variance in Longitudinal Imaging. Lecture Notes in Computer Science, 2010, 13, 324-331.	1.3	21
104	N4ITK: Improved N3 bias correction with robust B-spline approximation. , 2010, , .		16
105	Reversal of the concreteness effect in semantic dementia. Cognitive Neuropsychology, 2009, 26, 568-579.	1.1	103
106	Neuroanatomy of Apathy and Disinhibition in Frontotemporal Lobar Degeneration. Dementia and Geriatric Cognitive Disorders, 2009, 27, 96-104.	1.5	140
107	Appearance and incomplete label matching for diffeomorphic template based hippocampus segmentation. Hippocampus, 2009, 19, 565-571.	1.9	46
108	Structure specific analysis of the hippocampus in temporal lobe epilepsy. Hippocampus, 2009, 19, 517-525.	1.9	24

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109	Non-fluent speech in frontotemporal lobar degeneration. Journal of Neurolinguistics, 2009, 22, 370-383.	1.1	119
110	Directly Manipulated Free-Form Deformation Image Registration. IEEE Transactions on Image Processing, 2009, 18, 624-635.	9.8	70
111	A high-resolution computational atlas of the human hippocampus from postmortem magnetic resonance imaging at 9.4ÂT. Neurolmage, 2009, 44, 385-398.	4.2	160
112	Registration based cortical thickness measurement. NeuroImage, 2009, 45, 867-879.	4.2	217
113	Evaluation of 14 nonlinear deformation algorithms applied to human brain MRI registration. NeuroImage, 2009, 46, 786-802.	4.2	1,988
114	Longitudinal Cortical Atrophy in Amyotrophic Lateral Sclerosis With Frontotemporal Dementia. Archives of Neurology, 2009, 66, 138-9.	4.5	17
115	Advanced Normalization Tools: V1.0. The Insight Journal, 2009, , .	0.2	224
116	Symmetric diffeomorphic image registration with cross-correlation: Evaluating automated labeling of elderly and neurodegenerative brain. Medical Image Analysis, 2008, 12, 26-41.	11.6	4,092
117	Atypical cortical connectivity and visuospatial cognitive impairments are related in children with chromosome 22q11.2 deletion syndrome. Behavioral and Brain Functions, 2008, 4, 25.	3.3	51
118	Structural consequences of diffuse traumatic brain injury: A large deformation tensor-based morphometry study. NeuroImage, 2008, 39, 1014-1026.	4.2	142
119	Multivariate Analysis of Structural and Diffusion Imaging in Traumatic Brain Injury. Academic Radiology, 2008, 15, 1360-1375.	2.5	95
120	Multivariate analysis of thalamo-cortical connectivity loss in TBI., 2008,,.		1
121	Building an atlas of hippocampal subfields using postmortem MRI. , 2008, , .		2
122	Branching medial models for cardiac shape representation. , 2008, , .		4
123	Spatial correspondence based asymmetry analysis in FMRI., 2008,,.		0
124	Shape-Based Alignment of Hippocampal Subfields: Evaluation in Postmortem MRI. Lecture Notes in Computer Science, 2008, 11, 510-517.	1.3	9
125	Cardiac Medial Modeling and Time-Course Heart Wall Thickness Analysis. Lecture Notes in Computer Science, 2008, 11, 766-773.	1.3	12
126	SYMMETRIC SHAPE AVERAGING IN THE DIFFEOMORPHIC SPACE., 2007,,.		3

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127	High-Dimensional Spatial Normalization of Diffusion Tensor Images Improves the Detection of White Matter Differences: An Example Study Using Amyotrophic Lateral Sclerosis. IEEE Transactions on Medical Imaging, 2007, 26, 1585-1597.	8.9	250
128	Multi-start Method with Prior Learning for Image Registration. , 2007, , .		4
129	Altered Resting Cerebral Blood Flow in Adolescents With in Utero Cocaine Exposure Revealed by Perfusion Functional MRI. Pediatrics, 2007, 120, e1245-e1254.	2.1	70
130	Effects of Heavy In Utero Cocaine Exposure on Adolescent Caudate Morphology. Pediatric Neurology, 2007, 37, 275-279.	2.1	58
131	Multivariate examination of brain abnormality using both structural and functional MRI. NeuroImage, 2007, 36, 1189-1199.	4.2	121
132	Measuring Cortical Thickness Using An Image Domain Local Surface Model And Topology Preserving Segmentation., 2007,,.		0
133	Neuroinformatics for Genome-Wide 3-D Gene Expression Mapping in the Mouse Brain. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2007, 4, 382-393.	3.0	109
134	Canine and Human Visual Cortex Intact and Responsive Despite Early Retinal Blindness from RPE65 Mutation. PLoS Medicine, 2007, 4, e230.	8.4	107
135	Validation of plaster endocast morphology through 3D CT image analysis. American Journal of Physical Anthropology, 2007, 132, 183-192.	2.1	34
136	Multivariate Normalization with Symmetric Diffeomorphisms for Multivariate Studies., 2007, 10, 359-366.		40
137	Spatiotemporal Normalization for Longitudinal Analysis of Gray Matter Atrophy in Frontotemporal Dementia. Lecture Notes in Computer Science, 2007, 10, 303-310.	1.3	25
138	Lagrangian frame diffeomorphic image registration: Morphometric comparison of human and chimpanzee cortex. Medical Image Analysis, 2006, 10, 397-412.	11.6	135
139	Symmetric Diffeomorphic Image Registration: Evaluating Automated Labeling of Elderly and Neurodegenerative Cortex and Frontal Lobe. Lecture Notes in Computer Science, 2006, , 50-57.	1.3	29
140	Geodesic Image Normalization and Temporal Parameterization in the Space of Diffeomorphisms. Lecture Notes in Computer Science, 2006, , 9-16.	1.3	6
141	Anatomy-Based Visualizations of Diffusion Tensor Images of Brain White Matter. Mathematics and Visualization, 2006, , 155-163.	0.6	3
142	The Correlation of Cognitive Decline with Frontotemporal Dementia Induced Annualized Gray Matter Loss Using Diffeomorphic Morphometry. Alzheimer Disease and Associated Disorders, 2005, 19, S25-S28.	1.3	19
143	Towards a Dynamic Model of Pulmonary Parenchymal Deformation: Evaluation of Methods for Temporal Reparameterization of Lung Data. Lecture Notes in Computer Science, 2005, 8, 328-335.	1.3	7
144	Geodesic Image Interpolation: Parameterizing and Interpolating Spatiotemporal Images. Lecture Notes in Computer Science, 2005, , 247-258.	1.3	4

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145	Symmetric Geodesic Shape Averaging and Shape Interpolation. Lecture Notes in Computer Science, 2004, , 99-110.	1.3	8
146	Geodesic estimation for large deformation anatomical shape averaging and interpolation. Neurolmage, 2004, 23, S139-S150.	4.2	379
147	Non-Rigid Image Registration. , 2004, , 307-348.		5
148	Characterization of sexual dimorphism in the human corpus callosum. NeuroImage, 2003, 20, 512-519.	4.2	129
149	The Shape Operator for Differential Analysis of Images. Lecture Notes in Computer Science, 2003, 18, 101-113.	1.3	13
150	Formulation and Evaluation of Variational Curve Matching with Prior Constraints. Lecture Notes in Computer Science, 2003, , 21-30.	1.3	6
151	Three-Dimensional Interactive Vascular Postprocessing Techniques. Biomedical Engineering Series, 2003, , 99-142.	0.4	0
152	Soft parametric curve matching in scale-space. , 2002, , .		8
153	Shape Characterization of the Corpus Callosum in Schizophrenia Using Template Deformation. Lecture Notes in Computer Science, 2002, , 381-388.	1.3	8