Juan R Cebral

List of Publications by Year
in descending order

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135 papers	6,482 citations	53751 45 h-index	69214 77 g-index
135 all docs	135 docs citations	135 times ranked	4080 citing authors

#	Article	IF	Citations
1	Efficient pipeline for image-based patient-specific analysis of cerebral aneurysm hemodynamics: technique and sensitivity. IEEE Transactions on Medical Imaging, 2005, 24, 457-467.	5.4	473
2	Characterization of cerebral aneurysms for assessing risk of rupture by using patient-specific computational hemodynamics models. American Journal of Neuroradiology, 2005, 26, 2550-9.	1.2	437
3	Quantitative Characterization of the Hemodynamic Environment in Ruptured and Unruptured Brain Aneurysms. American Journal of Neuroradiology, 2011, 32, 145-151.	1.2	381
4	Association of Hemodynamic Characteristics and Cerebral Aneurysm Rupture. American Journal of Neuroradiology, 2011, 32, 264-270.	1.2	359
5	Aneurysm Rupture Following Treatment with Flow-Diverting Stents: Computational Hemodynamics Analysis of Treatment. American Journal of Neuroradiology, 2011, 32, 27-33.	1.2	326
6	Flow-induced, inflammation-mediated arterial wall remodeling in the formation and progression of intracranial aneurysms. Neurosurgical Focus, 2019, 47, E21.	1.0	157
7	Hemodynamics and Bleb Formation in Intracranial Aneurysms. American Journal of Neuroradiology, 2010, 31, 304-310.	1.2	155
8	Technologies for Guidance of Radiofrequency Ablation in the Multimodality Interventional Suite of the Future. Journal of Vascular and Interventional Radiology, 2007, 18, 9-24.	0.2	151
9	From medical images to anatomically accurate finite element grids. International Journal for Numerical Methods in Engineering, 2001, 51, 985-1008.	1.5	138
10	Blood Flow Modeling in Carotid Arteries with Computational Fluid Dynamics and MR Imaging. Academic Radiology, 2002, 9, 1286-1299.	1.3	132
11	Flowâ€“area relationship in internal carotid and vertebral arteries. Physiological Measurement, 2008, 29, 585-594.	1.2	127
12	Flow Conditions in the Intracranial Aneurysm Lumen Are Associated with Inflammation and Degenerative Changes of the Aneurysm Wall. American Journal of Neuroradiology, 2017, 38, 119-126.	1.2	127
13	Efficient simulation of blood flow past complex endovascular devices using an adaptive embedding technique. IEEE Transactions on Medical Imaging, 2005, 24, 468-476.	5.4	121
14	Estimation of bolus dispersion effects in perfusion MRI using image-based computational fluid dynamics. NeuroImage, 2003, 19, 341-353.	2.1	102
15	Blood-flow models of the circle of Willis from magnetic resonance data. Journal of Engineering Mathematics, 2003, 47, 369-386.	0.6	98
16	Suggested Connections Between Risk Factors of Intracranial Aneurysms: A Review. Annals of Biomedical Engineering, 2013, 41, 1366-1383.	1.3	90
17	Digital reconstruction and morphometric analysis of human brain arterial vasculature from magnetic resonance angiography. NeuroImage, 2013, 82, 170-181.	2.1	88
18	Adaptive embedded and immersed unstructured grid techniques. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2173-2197.	3.4	86

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19	Simulation of intracranial aneurysm stenting: Techniques and challenges. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3567-3582.	3.4	86
20	Association between hemodynamic conditions and occlusion times after flow diversion in cerebral aneurysms. Journal of NeuroInterventional Surgery, 2015, 7, 286-290.	2.0	84
21	Computational fluid dynamics of stented intracranial aneurysms using adaptive embedded unstructured grids. International Journal for Numerical Methods in Fluids, 2008, 57, 475-493.	0.9	83
22	Patient-Specific Computational Modeling of Cerebral Aneurysms With Multiple Avenues of Flow From 3D Rotational Angiography Images. Academic Radiology, 2006, 13, 811-821.	1.3	82
23	Analysis of hemodynamics and wall mechanics at sites of cerebral aneurysm rupture. Journal of NeuroInterventional Surgery, 2015, 7, 530-536.	2.0	79
24	Computational hemodynamics framework for the analysis of cerebral aneurysms. International Journal for Numerical Methods in Biomedical Engineering, 2011, 27, 822-839.	1.0	78
25	Diversity in the Strength and Structure of Unruptured Cerebral Aneurysms. Annals of Biomedical Engineering, 2015, 43, 1502-1515.	1.3	75
26	Wall Apposition Is a Key Factor for Aneurysm Occlusion after Flow Diversion: A Histologic Evaluation in 41 Rabbits. American Journal of Neuroradiology, 2016, 37, 2087-2091.	1.2	71
27	CFD and PIV analysis of hemodynamics in a growing intracranialâ€‰aneurysm. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 214-228.	1.0	68
28	Merging of intersecting triangulations for finite element modeling. Journal of Biomechanics, 2001, 34, 815-819.	0.9	67
29	CFD Analysis Incorporating the Influence of Wall Motion: Application to Intracranial Aneurysms. Lecture Notes in Computer Science, 2006, 9, 438-445.	1.0	66
30	Hemodynamics in normal cerebral arteries: qualitative comparison of 4D phase-contrast magnetic resonance and image-based computational fluid dynamics. Journal of Engineering Mathematics, 2009, 64, 367-378.	0.6	63
31	Mechanism of Action and Biology of Flow Diverters in the Treatment of Intracranial Aneurysms. Neurosurgery, 2020, 86, S13-S19.	0.6	61
32	Computational Fluid Dynamics Modeling of Intracranial Aneurysms:. Academic Radiology, 2007, 14, 804-813.	1.3	60
33	Wall Mechanical Properties and Hemodynamics of Unruptured Intracranial Aneurysms. American Journal of Neuroradiology, 2015, 36, 1695-1703.	1.2	60
34	Tracheal and Central Bronchial Aerodynamics Using Virtual Bronchoscopy and Computational Fluid Dynamics. IEEE Transactions on Medical Imaging, 2004, 23, 1021-1033.	5.4	59
35	Multiple Aneurysms AnaTomy CHallenge 2018 (MATCH): Phase I: Segmentation. Cardiovascular Engineering and Technology, 2018, 9, 565-581.	0.7	59
36	Associations of hemodynamics, morphology, and patient characteristics with aneurysm rupture stratified by aneurysm location. Neuroradiology, 2019, 61, 275-284.	1.1	59

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37	Fast numerical solutions of patientâ€specific blood flows in 3D arterial systems. International Journal for Numerical Methods in Biomedical Engineering, 2010, 26, 73-85.	1.0	58
38	Local Hemodynamic Conditions Associated with Focal Changes in the Intracranial Aneurysm Wall. American Journal of Neuroradiology, 2019, 40, 510-516.	1.2	55
39	Hemodynamics and Rupture of Terminal Cerebral Aneurysms. Academic Radiology, 2009, 16, 1201-1207.	1.3	53
40	Computational fluid dynamics in brain aneurysms. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 801-808.	1.0	52
41	Patient-specific flow analysis of brain aneurysms at a single location: comparison of hemodynamic characteristics in small aneurysms. Medical and Biological Engineering and Computing, 2008, 46, 1113-1120.	1.6	51
42	Development and internal validation of an aneurysm rupture probability model based on patient characteristics and aneurysm location, morphology, and hemodynamics. International Journal of Computer Assisted Radiology and Surgery, 2018, 13, 1767-1779.	1.7	51
43	The effect of aneurysm geometry on the intra-aneurysmal flow condition. Neuroradiology, 2010, 52, 1135-1141.	1.1	50
44	Analysis of Hemodynamics and Aneurysm Occlusion after Flow-Diverting Treatment in Rabbit Models. American Journal of Neuroradiology, 2014, 35, 1567-1573.	1.2	50
45	Hemodynamics in a Lethal Basilar Artery Aneurysm Just before Its Rupture. American Journal of Neuroradiology, 2009, 30, 95-98.	1.2	48
46	Hemodynamics in growing and stable cerebral aneurysms. Journal of NeuroInterventional Surgery, 2016, 8, 407-412.	2.0	47
47	Morphometric, geographic, and territorial characterization of brain arterial trees. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 755-766.	1.0	41
48	Estimation of the differential pressure at renal artery stenoses. Magnetic Resonance in Medicine, 2004, 51, 969-977.	1.9	40
49	Deflated preconditioned conjugate gradient solvers for the Pressureâ€“Poisson equation. Journal of Computational Physics, 2008, 227, 10196-10208.	1.9	39
50	Patient-specific hemodynamic analysis of small internal carotid artery-ophthalmic artery aneurysms. World Neurosurgery, 2009, 72, 444-450.	1.3	35
51	Cluster Analysis of Vortical Flow in Simulations of Cerebral Aneurysm Hemodynamics. IEEE Transactions on Visualization and Computer Graphics, 2016, 22, 757-766.	2.9	35
52	Hemodynamic differences between unstable and stable unruptured aneurysms independent of size and location: a pilot study. Journal of NeuroInterventional Surgery, 2017, 9, 376-380.	2.0	34
53	Regional Mapping of Flow and Wall Characteristics of Intracranial Aneurysms. Annals of Biomedical Engineering, 2016, 44, 3553-3567.	1.3	33
54	Improving the speed and accuracy of projection-type incompressible flow solvers. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 3087-3109.	3.4	32

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55	Unsteady wall shear stress analysis from image-based computational fluid dynamic aneurysm models under Newtonian and Casson rheological models. Medical and Biological Engineering and Computing, 2014, 52, 827-839.	1.6	32
56	Identification of Hostile Hemodynamics and Geometries of Cerebral Aneurysms: A Case-Control Study. American Journal of Neuroradiology, 2018, 39, 1860-1866.	1.2	32
57	Analysis of flow changes in side branches jailed by flow diverters in rabbit models. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 988-999.	1.0	30
58	Comparison of statistical learning approaches for cerebral aneurysm rupture assessment. International Journal of Computer Assisted Radiology and Surgery, 2020, 15, 141-150.	1.7	30
59	Computational modelling of blood flow in side arterial branches after stenting of cerebral aneurysms. International Journal of Computational Fluid Dynamics, 2008, 22, 669-676.	0.5	29
60	Hemodynamic analysis of intracranial aneurysms with moving parent arteries: Basilar tip aneurysms. International Journal for Numerical Methods in Biomedical Engineering, 2010, 26, 1219-1227.	1.0	29
61	Applications of patient-specific CFD in medicine and life sciences. International Journal for Numerical Methods in Fluids, 2003, 43, 637-650.	0.9	27
62	Differences in Hemodynamics and Rupture Rate of Aneurysms at the Bifurcation of the Basilar and Internal Carotid Arteries. American Journal of Neuroradiology, 2017, 38, 570-576.	1.2	27
63	Adaptive Embedded/Immersed Unstructured Grid Techniques. Archives of Computational Methods in Engineering, 2007, 14, 279-301.	6.0	26
64	Hemodynamic analysis of fast and slow aneurysm occlusions by flow diversion in rabbits. Journal of NeuroInterventional Surgery, 2015, 7, 931-935.	2.0	24
65	Calcification in Human Intracranial Aneurysms Is Highly Prevalent and Displays Both Atherosclerotic and Nonatherosclerotic Types. Arteriosclerosis, Thrombosis, and Vascular Biology, 2019, 39, 2157-2167.	1.1	24
66	Asymptomatic carotid artery stenosis is associated with cerebral hypoperfusion. Journal of Vascular Surgery, 2021, 73, 1611-1621.e2.	0.6	24
67	Hemodynamic Characteristics of Ruptured and Unruptured Multiple Aneurysms at Mirror and Ipsilateral Locations. American Journal of Neuroradiology, 2017, 38, 2301-2307.	1.2	22
68	Comparison of bodyâ€fitted, embedded and immersed solutions of low Reynoldsâ€number 3â€D incompressible flows. International Journal for Numerical Methods in Fluids, 2008, 57, 13-30.	0.9	20
69	Effects of changing physiologic conditions on the in vivo quantification of hemodynamic variables in cerebral aneurysms treated with flow diverting devices. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 135-142.	1.0	20
70	Angioarchitectures and Hemodynamic Characteristics of Posterior Communicating Artery Aneurysms and Their Association with Rupture Status. American Journal of Neuroradiology, 2017, 38, 2111-2118.	1.2	20
71	Combining data from multiple sources to study mechanisms of aneurysm disease: Tools and techniques. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e3133.	1.0	20
72	Regional Aneurysm Wall Enhancement is Affected by Local Hemodynamics: A 7T MRI Study. American Journal of Neuroradiology, 2021, 42, 464-470.	1.2	20

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73	Characterization of shear stress on the wall of the carotid artery using magnetic resonance imaging and computational fluid dynamics. Studies in Health Technology and Informatics, 2005, 113, 412-42.	0.2	20
74	Hemodynamics in aneurysm blebs with different wall characteristics. Journal of NeuroInterventional Surgery, 2021, 13, 642-646.	2.0	19
75	Subject-specific modeling of intracranial aneurysms. , 2004, , .		18
76	Relationship between aneurysm occlusion and flow diverting device oversizing in a rabbit model. Journal of NeuroInterventional Surgery, 2016, 8, 94-98.	2.0	17
77	Gene expression comparison of flow diversion and coiling in an experimental aneurysm model. Journal of NeuroInterventional Surgery, 2015, 7, 926-930.	2.0	16
78	Blebs in intracranial aneurysms: prevalence and general characteristics. Journal of NeuroInterventional Surgery, 2021, 13, 226-230.	2.0	16
79	Hemodynamic conditions that favor bleb formation in cerebral aneurysms. Journal of NeuroInterventional Surgery, 2021, 13, 231-236.	2.0	15
80	Advances in FEFLO. , 2001, , .		14
81	Extending statistical learning for aneurysm rupture assessment to Finnish and Japanese populations using morphology, hemodynamics, and patient characteristics. Neurosurgical Focus, 2019, 47, E16.	1.0	14
82	Strategy for analysis of flow diverting devices based on multiâ€modality imageâ€based modeling. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 951-968.	1.0	12
83	Understanding Angiography-Based Aneurysm Flow Fields through Comparison with Computational Fluid Dynamics. American Journal of Neuroradiology, 2017, 38, 1180-1186.	1.2	12
84	Concomitant coiling reduces metalloproteinase levels in flow diverter-treated aneurysms but anti-inflammatory treatment has no effect. Journal of NeuroInterventional Surgery, 2017, 9, 307-310.	2.0	12
85	External validation of cerebral aneurysm rupture probability model with data from two patient cohorts. Acta Neurochirurgica, 2018, 160, 2425-2434.	0.9	12
86	Imageâ€based modeling of blood flow in cerebral aneurysms treated with intrasaccular flow diverting devices. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3202.	1.0	12
87	Development of a statistical model for discrimination of rupture status in posterior communicating artery aneurysms. Acta Neurochirurgica, 2018, 160, 1643-1652.	0.9	12
88	Parabolic recovery of boundary gradients. Communications in Numerical Methods in Engineering, 2007, 24, 1611-1615.	1.3	11
89	Noninvasive characterization of carotid plaque strain. Journal of Vascular Surgery, 2017, 65, 1653-1663.	0.6	11
90	Patient-Specific Simulation of Carotid Artery Stenting Using Computational Fluid Dynamics. Lecture Notes in Computer Science, 2001, , 153-160.	1.0	10

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91	Simulation of Stent Deployment in Patient-Specific Cerebral Aneurysm Models for Their Hemodynamics Analysis. , 2008, , .		9
92	Hemodynamics in two tandem aneurysms treated with flow diverters. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 517-524.	1.0	9
93	Differential Gene Expression in Coiled versus Flow-Diverter-Treated Aneurysms: RNA Sequencing Analysis in a Rabbit Aneurysm Model. American Journal of Neuroradiology, 2016, 37, 1114-1121.	1.2	9
94	Incorporating variability of patient inflow conditions into statistical models for aneurysm rupture assessment. Acta Neurochirurgica, 2020, 162, 553-566.	0.9	9
95	A feature-preserving volumetric technique to merge surface triangulations. International Journal for Numerical Methods in Engineering, 2002, 55, 177-190.	1.5	8
96	Improving the Speed and Accuracy of Projection-Type Incompressible Flow Solvers. , 2003, , .		8
97	A note on coding and standardization of categorical variables in (sparse) group lasso regression. Journal of Statistical Planning and Inference, 2020, 206, 1-11.	0.4	8
98	Analysis of Flow Dynamics and Outcomes of Cerebral Aneurysms Treated with Intrasaccular Flow-Diverting Devices. American Journal of Neuroradiology, 2019, 40, 1511-1516.	1.2	8
99	Image-based finite element modeling of hemodynamics in stenosed carotid artery. , 2002, 4683, 297.		7
100	Hemodynamics before and after bleb formation in cerebral aneurysms. , 2007, , .		7
101	Hemodynamic characteristics of stable and unstable vertebrobasilar dolichoectatic and fusiform aneurysms. Journal of NeuroInterventional Surgery, 2018, 10, 1102-1107.	2.0	7
102	Combined clinical and computational information in complex cerebral aneurysms: application to mirror cerebral aneurysms. , 2007, , .		6
103	Mechanisms Involved in the Formation of Biocompatible Lipid Polymeric Hollow Patchy Particles. Langmuir, 2015, 31, 6639-6648.	1.6	6
104	Downstream vascular changes after flow-diverting device deployment in a rabbit model. Journal of NeuroInterventional Surgery, 2019, 11, 523-527.	2.0	6
105	Identification of Small, Regularly Shaped Cerebral Aneurysms Prone to Rupture. American Journal of Neuroradiology, 2022, 43, 547-553.	1.2	6
106	Computational modeling of cerebral aneurysms in arterial networks reconstructed from multiple 3D rotational angiography images. , 2005, 5746, 233.		5
107	Multimodality image-based models of carotid artery hemodynamics (Cum Laude Poster Award). , 2004, , .		4
108	Computational analysis of anterior communicating artery aneurysm shear stress before and after aneurysm formation. Journal of Physics: Conference Series, 2011, 332, 012001.	0.3	4

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109	Analysis of hemodynamic changes from aneurysm inception to large sizes. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3415.	1.0	4
110	Conservative load projection and tracking for fluid-structure problems. AIAA Journal, 1997, 35, 687-692.	1.5	4
111	Prediction of bleb formation in intracranial aneurysms using machine learning models based on aneurysm hemodynamics, geometry, location, and patient population. Journal of NeuroInterventional Surgery, 2022, 14, 1002-1007.	2.0	4
112	Comparison of Body-Fitted, Embedded and Immersed Solutions of Low Reynolds-Number Incompressible Flows. , 2007, , .		3
113	Connecting curves in higher dimensions. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 215101.	0.7	3
114	Finite element modeling of the Circle of Willis from magnetic resonance data. , 2003, , .		2
115	Hemodynamic patterns of anterior communicating artery aneurysms: a possible association with rupture. , 2007, , .		2
116	Image-based modeling of the hemodynamics in cerebral arterial trees. Proceedings of SPIE, 2009, , .	0.8	2
117	Evaluation of Outcome Prediction of Flow Diversion for Intracranial Aneurysms. American Journal of Neuroradiology, 2021, 42, 1973-1978.	1.2	2
118	Quantification of the Rupture Potential of Patient-Specific Intracranial Aneurysms under Contact Constraints. Bioengineering, 2021, 8, 149.	1.6	2
119	Flow reversal in distal collaterals as a possible mechanism of delayed intraparenchymal hemorrhage after flow diversion treatment of cerebral aneurysms. Frontiers in Physiology, 0, 13, .	1.3	2
120	Simulation of endovascular interventions of cerebral aneurysms: techniques and evaluation. , 2005, , .		1
121	Effects of parent vessel geometry on intraaneurysmal flow patterns. , 2006, , .		1
122	A study of the hemodynamics of anterior communicating artery aneurysms. , 2006, 6143, 166.		1
123	Hemodynamic differences in intracranial anerusysm blebs due to blood rheology. Journal of Physics: Conference Series, 2013, 477, 012001.	0.3	1
124	Cerebrovascular systems with concomitant pathologies:A computational hemodynamics study. Journal of Physics: Conference Series, 2013, 477, 012003.	0.3	1
125	Patient-specific modeling of intracranial aneurysmal stenting. , 2007, , .		0
126	Progress in computational fluid dynamics for bioengineering modelling. International Journal of Computational Fluid Dynamics, 2009, 23, 567-568.	0.5	0

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127	Coarse-Grain Deflation for Preconditioned Conjugate Gradient Solvers: Application to the Pressure Poisson Equation. , 2009, , .		0
128	Computational hemodynamic study of intracranial aneurysms coexistent with proximal artery stenosis. Proceedings of SPIE, 2012, , .	0.8	0
129	Computational study of anterior communicating artery hemodynamics before aneurysm formation. Proceedings of SPIE, 2012, , .	0.8	0
130	Wall motion and hemodynamics in intracranial aneurysms. Journal of Physics: Conference Series, 2013, 477, 012004.	0.3	0
131	Time analysis of aneurysm wall shear stress for both Newtonian and Casson flows from image-based CFD models. Proceedings of SPIE, 2014, , .	0.8	0
132	Aneurysm flow characteristics in realistic carotid artery aneurysm models induced by proximal virtual stenotic plaques: a computational hemodynamics study. , 2015, , .		0
133	REPLY:. American Journal of Neuroradiology, 2017, 38, E52-E52.	1.2	0
134	Abstract WMP27: Differential Gene Expression in Coiled Versus Flow-diverter Treated Aneurysms: a RNA-Seq Analysis in Rabbit Aneurysm Model. Stroke, 2016, 47, .	1.0	0
135	Differences Between Ruptured Aneurysms With and Without Blebs: Mechanistic Implications. Cardiovascular Engineering and Technology, 0, , .	0.7	0