Vijayaraghavan Rajagopal

List of Publications by Year
in descending order

68 papers	1,084 citations	394421 19 h-index	454955 30 g-index
82 all docs	82 docs citations	82 times ranked	1199 citing authors

#	Article	IF	Citations
1	OpenCMISS: A multi-physics & multi-scale computational infrastructure for the VPH/Physiome project. Progress in Biophysics and Molecular Biology, 2011, 107, 32-47.	2.9	123
2	Creating Individual-specific Biomechanical Models of the Breast for Medical Image Analysis. Academic Radiology, 2008, 15, 1425-1436.	2.5	69
3	Determining the finite elasticity reference state from a loaded configuration. International Journal for Numerical Methods in Engineering, 2007, 72, 1434-1451.	2.8	62
4	Examination of the Effects of Heterogeneous Organization of RyR Clusters, Myofibrils and Mitochondria on Ca2+ Release Patterns in Cardiomyocytes. PLoS Computational Biology, 2015, 11, e1004417.	3.2	46
5	Modeling breast biomechanics for multiâ€modal image analysisâ€"successes and challenges. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2010, 2, 293-304.	6.6	45
6	A biomechanical model of mammographic compressions. Biomechanics and Modeling in Mechanobiology, 2008, 7, 43-52.	2.8	43
7	Breast lesion co-localisation between X-ray and MR images using finite element modelling. Medical Image Analysis, 2013, 17, 1256-1264.	11.6	41
8	Predicting Tumour Location by Simulating Large Deformations of the Breast Using a 3D Finite Element Model and Nonlinear Elasticity. Lecture Notes in Computer Science, 2004, , 217-224.	1.3	36
9	Modeling of the mechanical function of the human gastroesophageal junction using an anatomically realistic three-dimensional model. Journal of Biomechanics, 2009, 42, 1604-1609.	2.1	36
10	Identification of mechanical properties of heterogeneous soft bodies using gravity loading. International Journal for Numerical Methods in Biomedical Engineering, 2011, 27, 391-407.	2.1	36
11	Computational modeling of singleâ€cell mechanics and cytoskeletal mechanobiology. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2018, 10, e1407.	6.6	36
12	Unconventional acoustic approaches for localized and designed micromanipulation. Lab on A Chip, 2021, 21, 2837-2856.	6.0	36
13	Changes in mitochondrial morphology and organization can enhance energy supply from mitochondrial oxidative phosphorylation in diabetic cardiomyopathy. American Journal of Physiology - Cell Physiology, 2017, 312, C190-C197.	4.6	33
14	An automated workflow for segmenting single adult cardiac cells from large-volume serial block-face scanning electron microscopy data. Journal of Structural Biology, 2018, 202, 275-285.	2.8	27
15	Super-resolution fluorescence imaging to study cardiac biophysics: Î±-actinin distribution and Z-disk topologies in optically thick cardiac tissue slices. Progress in Biophysics and Molecular Biology, 2014, 115, 328-339.	2.9	25
16	Breast Image Registration by Combining Finite Elements and Free-Form Deformations. Lecture Notes in Computer Science, 2010, , 736-743.	1.3	24
17	Insights on the impact of mitochondrial organisation on bioenergetics in high-resolution computational models of cardiac cell architecture. PLoS Computational Biology, 2018, 14, e1006640.	3.2	23
18	Surface areaâ€toâ€volume ratio, not cellular viscoelasticity, is the major determinant of red blood cell traversal through small channels. Cellular Microbiology, 2021, 23, e13270.	2.1	22

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19	Modelling Mammographic Compression of the Breast. Lecture Notes in Computer Science, 2008, 11, 758-765.	1.3	22
20	Frictional contact mechanics methods for soft materials: Application to tracking breast cancers. Journal of Biomechanics, 2008, 41, 69-77.	2.1	20
21	Multimodal analysis of <i>Plasmodium knowlesi</i> â€infected erythrocytes reveals large invaginations, swelling of the host cell, and rheological defects. Cellular Microbiology, 2019, 21, e13005.	2.1	20
22	Erythrocyte Î² spectrin can be genetically targeted to protect mice from malaria. Blood Advances, 2017, 1, 2624-2636.	5.2	16
23	EM-stellar: benchmarking deep learning for electron microscopy image segmentation. Bioinformatics, 2021, 37, 97-106.	4.1	16
24	Membrane Tension Can Enhance Adaptation to Maintain Polarity of Migrating Cells. Biophysical Journal, 2020, 119, 1617-1629.	0.5	15
25	Ca2+ Release via IP3 Receptors Shapes the Cardiac Ca2+ Transient for Hypertrophic Signaling. Biophysical Journal, 2020, 119, 1178-1192.	0.5	13
26	Development of a three-dimensional finite element model of breast mechanics. , 2004, 2004, 5080-3.		11
27	The Breast Biomechanics Reference State for Multi-modal Image Analysis. Lecture Notes in Computer Science, 2008, , 385-392.	1.3	11
28	Towards Tracking Breast Cancer Across Medical Images Using Subject-Specific Biomechanical Models. , 2007, 10, 651-658.		11
29	Modelling Prone to Supine Breast Deformation Under Gravity Loading Using Heterogeneous Finite Element Models. , 2012, , 29-38.		10
30	Periodic Rayleigh streaming vortices and Eckart flow arising from traveling-wave-based diffractive acoustic fields. Physical Review E, 2021, 104, 045104.	2.1	10
31	Finite Element Modelling of Breast Biomechanics: Directly Calculating the Reference State. , 2006, 2006, 420-3.		9
32	EM-net: Deep learning for electron microscopy image segmentation. , 2021, , .		9
33	Cortical tension initiates the positive feedback loop between cadherin and F-actin. Biophysical Journal, 2022, 121, 596-606.	0.5	9
34	Assessing Cardiomyocyte Excitation-Contraction Coupling Site Detection From Live Cell Imaging Using a Structurally-Realistic Computational Model of Calcium Release. Frontiers in Physiology, 2019, 10, 1263.	2.8	8
35	Patient-Specific Modeling of Breast Biomechanics with Applications to Breast Cancer Detection and Treatment. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2011, , 379-412.	1.0	7
36	Automated segmentation of cardiomyocyte Z-disks from high-throughput scanning electron microscopy data. BMC Medical Informatics and Decision Making, 2019, 19, 272.	3.0	7

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37	Efficient estimation of loadâ€free left ventricular geometry and passive myocardial properties using principal component analysis. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3313.	2.1	7
38	EGFRvIII Promotes Cell Survival during Endoplasmic Reticulum Stress through a Reticulocalbin 1-Dependent Mechanism. Cancers, 2021, 13, 1198.	3.7	7
39	Automated framework to reconstruct 3D model of cardiac Z-disk: an image processing approach. , 2018, , .		6
40	Assessment of single beat end-systolic elastance methods for quantifying ventricular contractility. Heart and Vessels, 2019, 34, 716-723.	1.2	6
41	Mapping Microcalcifications Between 2D Mammograms and 3D MRI Using a Biomechanical Model of the Breast. , 2010, , 17-28.		6
42	Stochastic modelling of cardiac cell structure. , 2010, 2010, 3257-60.		5
43	A Semi-Automated Workflow for Segmenting Contents of Single Cardiac Cells from Serial-Block-Face Scanning Electron Microscopy Data. Microscopy and Microanalysis, 2017, 23, 240-241.	0.4	4
44	Paradoxes of Hymenoptera flight muscles, extreme machines. Biophysical Reviews, 2022, 14, 403-412.	3.2	4
45	The Cell Physiome: What Do We Need in a Computational Physiology Framework for Predicting Single-Cell Biology?. Annual Review of Biomedical Data Science, 2022, 5, 341-366.	6.5	4
46	Role of actin filaments and cis binding in cadherin clustering and patterning. PLoS Computational Biology, 2022, 18, e1010257.	3.2	4
47	Biomechanical modelling for breast image registration. Proceedings of SPIE, 2008, , .	0.8	3
48	Creating a Structurally Realistic Finite Element Geometric Model of a Cardiomyocyte to Study the Role of Cellular Architecture in Cardiomyocyte Systems Biology. Journal of Visualized Experiments, 2018, , .	0.3	3
49	Method for Validating Breast Compression Models Using Normalised Cross-Correlation. , 2010, , 63-71.		3
50	Finite element modelling of breast biomechanics: finding a reference state. , 2005, 2005, 3268-71.		2
51	A computational study of the role of mitochondrial organization on cardiac bioenergetics. , 2017, 2017, 2696-2699.		2
52	Modelling cardiomyocyte energetics. , 0, , .		2
53	Multimodal imaging reveals membrane skeleton reorganisation during reticulocyte maturation and differences in dimple and rim regions of mature erythrocytes. Journal of Structural Biology: X, 2022, 6, 100056.	1.3	2
54	Correlation of breast image alignment using biomechanical modelling. Proceedings of SPIE, 2009, , .	0.8	1

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55	Creatine-Kinase Shuttle and Rapid Mitochondrial Membrane Potential Conductivity are Needed Simultaneously to Maintain Uniform Metabolite Distributions in the Cardiac Cell Contraction Cycle. Biophysical Journal, 2018, 114, 550a.	0.5	1
56	Mixed Signals: Interaction between RyR and IP3R Mediated Calcium Release Shapes the Calcium Transient for Hypertrophic Signalling in Cardiomyocytes. Biophysical Journal, 2018, 114, 212a-213a.	0.5	1
57	A toolbox for generating scalable mitral valve morphometric models. Computers in Biology and Medicine, 2021, 135, 104628.	7.0	1
58	Computational modeling of the breast during mammography for tumor tracking. , 2005, 5746, 817.		0
59	Modelling the Structure and Function of Cardiac Cell Transverse-Axial-Tubules. Biophysical Journal, 2011, 100, 293a.	0.5	0
60	Cardiac Excitation-Contraction Coupling Proteins: A 3D Spatial Analysis. Biophysical Journal, 2011, 100, 621a-622a.	0.5	0
61	Subcellular Structural Changes in Diabetic Cardiomyopathy and its Impact on Cardiac Cell Calcium Dynamics. Biophysical Journal, 2012, 102, 104a.	0.5	0
62	Detecting RyR Clusters with CaCLEAN: Validation and Influence of Spatial Heterogeneity. Biophysical Journal, 2019, 116, 42a-43a.	0.5	0
63	How Does the Internal Structure of Cardiac Muscle Cells Regulate Cellular Metabolism?. Microscopy and Microanalysis, 2019, 25, 240-241.	0.4	0
64	The Feedback between Cellular Mechanics and Chemical Signalling during Cytoskeletal Remodelling. Biophysical Journal, 2019, 116, 414a.	0.5	0
65	A Computational Study of the Dynamics of Cadherin-Catenin Complex Regulated by Actin Cytoskeleton. Biophysical Journal, 2021, 120, 130a.	0.5	0
66	Enhancing student learning through trans-disciplinary project-based assessment in bioengineering. Pacific Journal of Technology Enhanced Learning, 2021, 3, 4-5.	0.3	0
67	Surface Area-to-Volume Ratio, not Cellular Viscoelasticity is the Major Determinant of Red Blood Cell Traversal through Small Channels. Biophysical Journal, 2021, 120, 170a.	0.5	0
68	Respiration mask waveguide optimisation for maximised speech intelligibility. Journal of the Acoustical Society of America, 2021, 150, 2030-2039.	1.1	0