Pras Pathmanathan

List of Publications by Year
in descending order

32 papers	2,491 citations	279798 23 h-index	434195 31 g-index
33 all docs	33 docs citations	33 times ranked	2455 citing authors

#	Article	IF	Citations
1	Chaste: An Open Source C++ Library for Computational Physiology and Biology. PLoS Computational Biology, 2013, 9, e1002970.	3.2	375
2	The â€˜Digital Twinâ€™ to enable the vision of precision cardiology. European Heart Journal, 2020, 41, 4556-4564.	2.2	319
3	Verification of cardiac tissue electrophysiology simulators using an <i>N</i> -version benchmark. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 4331-4351.	3.4	253
4	Chaste: A test-driven approach to software development for biological modelling. Computer Physics Communications, 2009, 180, 2452-2471.	7.5	207
5	Uncertainty and variability in computational and mathematical models of cardiac physiology. Journal of Physiology, 2016, 594, 6833-6847.	2.9	127
6	Uncertainty and variability in models of the cardiac action potential: Can we build trustworthy models?. Journal of Molecular and Cellular Cardiology, 2016, 96, 49-62.	1.9	113
7	Computational assessment of drugâ€induced effects on the electrocardiogram: from ion channel to body surface potentials. British Journal of Pharmacology, 2013, 168, 718-733.	5.4	98
8	Patient-Specific Cardiovascular Computational Modeling: Diversity of Personalization and Challenges. Journal of Cardiovascular Translational Research, 2018, 11, 80-88.	2.4	97
9	Advancing Regulatory Science With Computational Modeling for Medical Devices at the FDA's Office of Science and Engineering Laboratories. Frontiers in Medicine, 2018, 5, 241.	2.6	93
10	Predicting Tumor Location by Modeling the Deformation of the Breast. IEEE Transactions on Biomedical Engineering, 2008, 55, 2471-2480.	4.2	77
11	A numerical guide to the solution of the bidomain equations of cardiac electrophysiology. Progress in Biophysics and Molecular Biology, 2010, 102, 136-155.	2.9	71
12	Verification of computational models of cardiac electroâ€physiology. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 525-544.	2.1	63
13	Chaste: Cancer, Heart and Soft Tissue Environment. Journal of Open Source Software, 2020, 5, 1848.	4.6	58
14	Comprehensive Uncertainty Quantification and Sensitivity Analysis for Cardiac Action Potential Models. Frontiers in Physiology, 2019, 10, 721.	2.8	57
15	Uncertainty quantification of fast sodium current steady-state inactivation for multi-scale models of cardiac electrophysiology. Progress in Biophysics and Molecular Biology, 2015, 117, 4-18.	2.9	55
16	A Numerical Method for Cardiac Mechanoelectric Simulations. Annals of Biomedical Engineering, 2009, 37, 860-873.	2.5	48
17	A high-resolution computational model of the deforming human heart. Biomechanics and Modeling in Mechanobiology, 2015, 14, 829-849.	2.8	46
18	Considering discrepancy when calibrating a mechanistic electrophysiology model. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190349.	3.4	46

#	Article	IF	Citations
19	Ensuring reliability of safety-critical clinical applications of computational cardiac models. Frontiers in Physiology, 2013, 4, 358.	2.8	43
20	Validation and Trustworthiness of Multiscale Models of Cardiac Electrophysiology. Frontiers in Physiology, 2018, 9, 106.	2.8	43
21	A Parsimonious Model of the Rabbit Action Potential Elucidates the Minimal Physiological Requirements for Alternans and Spiral Wave Breakup. PLoS Computational Biology, 2016, 12, e1005087.	3.2	38
22	Filament Dynamics during Simulated Ventricular Fibrillation in a High-Resolution Rabbit Heart. BioMed Research International, 2015, 2015, 1-14.	1.9	35
23	Credibility Evidence for Computational Patient Models Used in the Development of Physiological Closed-Loop Controlled Devices for Critical Care Medicine. Frontiers in Physiology, 2019, 10, 220.	2.8	32
24	Quantitative Study of the Effect of Tissue Microstructure on Contraction in a Computational Model of Rat Left Ventricle. PLoS ONE, 2014, 9, e92792.	2.5	20
25	A Quantitative Systems Pharmacology Perspective on the Importance of Parameter Identifiability. Bulletin of Mathematical Biology, 2022, 84, 39.	1.9	19
26	Data-Driven Uncertainty Quantification for Cardiac Electrophysiological Models: Impact of Physiological Variability on Action Potential and Spiral Wave Dynamics. Frontiers in Physiology, 2020, 11, 585400.	2.8	15
27	Modelling the Effect of Gap Junctions on Tissue-Level Cardiac Electrophysiology. Bulletin of Mathematical Biology, 2014, 76, 431-454.	1.9	13
28	Stimulus Protocol Determines the Most Computationally Efficient Preconditioner for the Bidomain Equations. IEEE Transactions on Biomedical Engineering, 2010, 57, 2806-2815.	4.2	9
29	Effect of Heart Structure on Ventricular Fibrillation in the Rabbit: A Simulation Study. Frontiers in Physiology, 2019, 10, 564.	2.8	8
30	Design and execution of a verification, validation, and uncertainty quantification plan for a numerical model of left ventricular flow after LVAD implantation. PLoS Computational Biology, 2022, 18, e1010141.	3.2	7
31	Transmembrane Current Imaging in the Heart during Pacing and Fibrillation. Biophysical Journal, 2013, 105, 1710-1719.	0.5	1
32	Modelling the effect of gap junctions on tissue-level cardiac electrophysiology. Electronic Proceedings in Theoretical Computer Science, EPTCS, 0, 92, 1-15.	0.8	1