Ming-Chen Hsu

List of Publications by Year
in descending order

102 papers	8,720 citations	43973 48 h-index	45213 90 g-index
105 all docs	105 docs citations	105 times ranked	2679 citing authors

#	Article	IF	Citations
1	Effects of membrane and flexural stiffnesses on aortic valve dynamics: Identifying the mechanics of leaflet flutter in thinner biological tissues. Forces in Mechanics, 2022, 6, 100053.	1.3	9
2	Finite Element Simulation and Validation for Aerospace Applications: Stabilized Methods, Weak Dirichlet Boundary Conditions, and Discontinuity Capturing for Compressible Flows. , 2022, , .		2
3	Buffet-Induced Structural Response Prediction of Aircraft Horizontal Stabilizers Based on Immersogeometric Analysis and an Isogeometric Blended Shell Approach. , 2022, , .		3
4	Isogeometric blended shells for dynamic analysis: simulating aircraft takeoff and the resulting fatigue damage on the horizontal stabilizer. Computational Mechanics, 2022, 70, 1013-1024.	2.2	3
5	Finite element methodology for modeling aircraft aerodynamics: development, simulation, and validation. Computational Mechanics, 2022, 70, 549-563.	2.2	8
6	Computational investigation of left ventricular hemodynamics following bioprosthetic aortic and mitral valve replacement. Mechanics Research Communications, 2021, 112, 103604.	1.0	39
7	An octree-based immersogeometric approach for modeling inertial migration of particles in channels. Computers and Fluids, 2021, 214, 104764.	1.3	28
8	Quantification of load-dependent changes in the collagen fiber architecture forÂthe strut chordae tendineae-leaflet insertion of porcine atrioventricular heart valves. Biomechanics and Modeling in Mechanobiology, 2021, 20, 223-241.	1.4	8
9	Image-based patient-specific flow simulations are consistent with stroke in pediatric cerebrovascular disease. Biomechanics and Modeling in Mechanobiology, 2021, 20, 2071-2084.	1.4	7
10	Industrial scale Large Eddy Simulations with adaptive octree meshes using immersogeometric analysis. Computers and Mathematics With Applications, 2021, 97, 28-44.	1.4	15
11	Parameterization, geometric modeling, and isogeometric analysis of tricuspid valves. Computer Methods in Applied Mechanics and Engineering, 2021, 384, 113960.	3.4	22
12	Blended isogeometric Kirchhoffâ€"Love and continuum shells. Computer Methods in Applied Mechanics and Engineering, 2021, 385, 114005.	3.4	13
13	Simulating the time evolving geometry, mechanical properties, and fibrous structure of bioprosthetic heart valve leaflets under cyclic loading. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 123, 104745.	1.5	13
14	Stabilized methods for high-speed compressible flows: toward hypersonic simulations. Computational Mechanics, 2021, 67, 785-809.	2.2	38
15	Scalable adaptive PDE solvers in arbitrary domains. , 2021, , .		6
16	An in-silico benchmark for the tricuspid heart valve â€" Geometry, finite element mesh, Abaqus simulation, and result data set. Data in Brief, 2021, 39, 107664.	0.5	2
17	An immersogeometric formulation for free-surface flows with application to marine engineering problems. Computer Methods in Applied Mechanics and Engineering, 2020, 361, 112748.	3.4	49
18	High-Fidelity Finite Element Modeling and Analysis of Adaptive Gas Turbine Stator-Rotor Flow Interaction at Off-Design Conditions. Journal of Mechanics, 2020, 36, 595-606.	0.7	20

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19	Thinner biological tissues induce leaflet flutter in aortic heart valve replacements. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 19007-19016.	3.3	50
20	Optimizing Gas Turbine Performance Using the Surrogate Management Framework and High-Fidelity Flow Modeling. Energies, 2020, 13, 4283.	1.6	21
21	A pilot <i>in silico</i> modelingâ€based study of the pathological effects on the biomechanical function of tricuspid valves. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3346.	1.0	16
22	Isogeometric analysis of ice accretion on wind turbine blades. Computational Mechanics, 2020, 66, 311-322.	2.2	33
23	Heart valve isogeometric sequentially-coupled FSI analysis with the spaceâ€"time topology change method. Computational Mechanics, 2020, 65, 1167-1187.	2.2	63
24	Mechanics of Porcine Heart Valvesâ€™ Strut Chordae Tendineae Investigated as a Leafletâ€"Chordaeâ€"Papillary Muscle Entity. Annals of Biomedical Engineering, 2020, 48, 1463-1474.	1.3	9
25	Computational Cardiovascular Analysis with the Variational Multiscale Methods and Isogeometric Discretization. Modeling and Simulation in Science, Engineering and Technology, 2020, , 151-193.	0.4	21
26	ALE and Spaceâ€"Time Variational Multiscale Isogeometric Analysis of Wind Turbines and Turbomachinery. Modeling and Simulation in Science, Engineering and Technology, 2020, , 195-233.	0.4	21
27	Wind Turbine and Turbomachinery Computational Analysis with the ALE and Space-Time Variational Multiscale Methods and Isogeometric Discretization. Khoa Há»c á»©ng Dá»¥ng, 2020, 4, 1.	1.5	26
28	Immersogeometric fluidâ€"structure interaction modeling and simulation of transcatheter aortic valve replacement. Computer Methods in Applied Mechanics and Engineering, 2019, 357, 112556.	3.4	54
29	Computational Finite Element Analysis of Adaptive Gas Turbine Stator-Rotor Flow Interactions for Future Vertical Lift Propulsion. , 2019, , .		0
30	Mechanics of the Tricuspid Valveâ€"From Clinical Diagnosis/Treatment, In-Vivo and In-Vitro Investigations, to Patient-Specific Biomechanical Modeling. Bioengineering, 2019, 6, 47.	1.6	33
31	Immersogeometric analysis of moving objects in incompressible flows. Computers and Fluids, 2019, 189, 24-33.	1.3	30
32	A residual-based variational multiscale method with weak imposition of boundary conditions for buoyancy-driven flows. Computer Methods in Applied Mechanics and Engineering, 2019, 352, 345-368.	3.4	26
33	Immersogeometric analysis of compressible flows with application to aerodynamic simulation of rotorcraft. Mathematical Models and Methods in Applied Sciences, 2019, 29, 905-938.	1.7	34
34	A Deep Learning Framework for Design and Analysis of Surgical Bioprosthetic Heart Valves. Scientific Reports, 2019, 9, 18560.	1.6	37
35	Penalty coupling of non-matching isogeometric Kirchhoffâ€"Love shell patches with application to composite wind turbine blades. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 810-840.	3.4	84
36	A framework for isogeometricâ€analysisâ€based optimization of wind turbine blade structures. Wind Energy, 2019, 22, 153-170.	1.9	36

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37	Computational Cardiovascular Flow Analysis with the Variational Multiscale Methods. Khoa Há»¢ á»©ng Dá»¥ng, 2019, 3, 366.	1.5	37
38	An anisotropic constitutive model for immersogeometric fluidâ€"structure interaction analysis of bioprosthetic heart valves. Journal of Biomechanics, 2018, 74, 23-31.	0.9	56
39	A framework for designing patientâ€specific bioprosthetic heart valves using immersogeometric fluidâ€"structure interaction analysis. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e2938.	1.0	93
40	A contact formulation based on a volumetric potential: Application to isogeometric simulations of atrioventricular valves. Computer Methods in Applied Mechanics and Engineering, 2018, 330, 522-546.	3.4	61
41	Fluidâ€"Structure Interaction Analysis of Bioprosthetic Heart Valves: the Application of a Computationally-Efficient Tissue Constitutive Model. , 2018, , 447-469.		1
42	Immersogeometric Analysis of Bioprosthetic Heart Valves, Using the Dynamic Augmented Lagrangian Method. Modeling and Simulation in Science, Engineering and Technology, 2018, , 167-212.	0.4	8
43	Error estimates for projection-based dynamic augmented Lagrangian boundary condition enforcement, with application to fluidâ€"structure interaction. Mathematical Models and Methods in Applied Sciences, 2018, 28, 2457-2509.	1.7	40
44	Articulating Axial-Flow Turbomachinery Rotor Blade for Enabling Variable Speed Gas Turbine Engine. , 2018, , .		1
45	Optimizing Gas-Turbine Operation using Finite-Element CFD Modeling. , 2018, , .		1
46	Modeling of a hydraulic arresting gear using fluidâ€"structure interaction and isogeometric analysis. Computers and Fluids, 2017, 142, 3-14.	1.3	74
47	Compressible flows on moving domains: Stabilized methods, weakly enforced essential boundary conditions, sliding interfaces, and application to gas-turbine modeling. Computers and Fluids, 2017, 158, 201-220.	1.3	87
48	Rapid B-rep model preprocessing for immersogeometric analysis using analytic surfaces. Computer Aided Geometric Design, 2017, 52-53, 190-204.	0.5	30
49	Analytical Study of Articulating Turbine Rotor Blade Concept for Improved Off-Design Performance of Gas Turbine Engines. Journal of Engineering for Gas Turbines and Power, 2017, 139, .	0.5	20
50	A rapid and efficient isogeometric design space exploration framework with application to structural mechanics. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 1215-1256.	3.4	31
51	Computational methods for the aortic heart valve and its replacements. Expert Review of Medical Devices, 2017, 14, 849-866.	1.4	52
52	Projection-based stabilization of interface Lagrange multipliers in immersogeometric fluidâ€"thin structure interaction analysis, with application to heart valve modeling. Computers and Mathematics With Applications, 2017, 74, 2068-2088.	1.4	54
53	A framework for parametric design optimization using isogeometricÂanalysis. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 944-965.	3.4	59
54	Immersogeometric cardiovascular fluidâ€"structure interaction analysis with divergence-conforming B-splines. Computer Methods in Applied Mechanics and Engineering, 2017, 314, 408-472.	3.4	80

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55	Optimizing fluidâ€“structure interaction systems with immersogeometric analysis and surrogate modeling: Application to a hydraulic arresting gear. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 668-693.	3.4	86
56	The tetrahedral finite cell method: Higherâ€order immersogeometric analysis on adaptive nonâ€boundaryâ€fitted meshes. International Journal for Numerical Methods in Engineering, 2016, 107, 1054-1079.	1.5	42
57	Articulating Turbine Rotor Blade Concept for Improved Off-Design Performance of Gas Turbine Engines. , 2016, , .		2
58	Fluidâ€“Structure Interaction Modeling and Isogeometric Analysis of a Hydraulic Arresting Gear at Full Scale. Modeling and Simulation in Science, Engineering and Technology, 2016, , 463-476.	0.4	0
59	An Immersogeometric Method for the Simulation of Turbulent Flow Around Complex Geometries. Modeling and Simulation in Science, Engineering and Technology, 2016, , 111-125.	0.4	0
60	The non-symmetric Nitsche method for the parameter-free imposition of weak boundary and coupling conditions in immersed finite elements. Computer Methods in Applied Mechanics and Engineering, 2016, 309, 625-652.	3.4	71
61	Direct immersogeometric fluid flow analysis using B-rep CAD models. Computer Aided Geometric Design, 2016, 43, 143-158.	0.5	62
62	The tetrahedral finite cell method for fluids: Immersogeometric analysis of turbulent flow around complex geometries. Computers and Fluids, 2016, 141, 135-154.	1.3	91
63	Stability and Conservation Properties of Collocated Constraints in Immersogeometric Fluid-Thin Structure Interaction Analysis. Communications in Computational Physics, 2015, 18, 1147-1180.	0.7	35
64	A collocated <i>C</i>⁰ finite element method: Reduced quadrature perspective, cost comparison with standard finite elements, and explicit structural dynamics. International Journal for Numerical Methods in Engineering, 2015, 102, 576-631.	1.5	28
65	An interactive geometry modeling and parametric design platform for isogeometric analysis. Computers and Mathematics With Applications, 2015, 70, 1481-1500.	1.4	83
66	An immersogeometric variational framework for fluidâ€“structure interaction: Application to bioprosthetic heart valves. Computer Methods in Applied Mechanics and Engineering, 2015, 284, 1005-1053.	3.4	350
67	Dynamic and fluidâ€“structure interaction simulations of bioprosthetic heart valves using parametric design with T-splines and Fung-type material models. Computational Mechanics, 2015, 55, 1211-1225.	2.2	207
68	Isogeometric Kirchhoffâ€“Love shell formulations for general hyperelastic materials. Computer Methods in Applied Mechanics and Engineering, 2015, 291, 280-303.	3.4	245
69	Aerodynamic Simulation of Vertical-Axis Wind Turbines. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	1.1	97
70	Engineering Analysis and Design with ALE-VMS and Spaceâ€“Time Methods. Archives of Computational Methods in Engineering, 2014, 21, 481-508.	6.0	105
71	Aerodynamic and FSI Analysis of Wind Turbines with the ALE-VMS and ST-VMS Methods. Archives of Computational Methods in Engineering, 2014, 21, 359-398.	6.0	108
72	Finite element simulation of wind turbine aerodynamics: validation study using NREL Phase VI experiment. Wind Energy, 2014, 17, 461-481.	1.9	167

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73	Fluidâ€“structure interaction analysis of bioprosthetic heart valves: significance of arterial wall deformation. Computational Mechanics, 2014, 54, 1055-1071.	2.2	240
74	Computational Engineering Analysis and Design with ALE-VMS and ST Methods. Computational Methods in Applied Sciences (Springer), 2014, , 321-353.	0.1	3
75	Adjoint-based Control of Fluid-Structure Interaction for Computational Steering Applications. Procedia Computer Science, 2013, 18, 1989-1998.	1.2	29
76	Blended isogeometric shells. Computer Methods in Applied Mechanics and Engineering, 2013, 255, 133-146.	3.4	133
77	STRUCTURAL MECHANICS MODELING AND FSI SIMULATION OF WIND TURBINES. Mathematical Models and Methods in Applied Sciences, 2013, 23, 249-272.	1.7	127
78	ALE-VMS AND ST-VMS METHODS FOR COMPUTER MODELING OF WIND-TURBINE ROTOR AERODYNAMICS AND FLUIDâ€“STRUCTURE INTERACTION. Mathematical Models and Methods in Applied Sciences, 2012, 22, .	1.7	148
79	Isogeometric fluidâ€“structure interaction analysis with emphasis on non-matching discretizations, and with application to wind turbines. Computer Methods in Applied Mechanics and Engineering, 2012, 249-252, 28-41.	3.4	278
80	Fluidâ€“structure interaction modeling of wind turbines: simulating the full machine. Computational Mechanics, 2012, 50, 821-833.	2.2	253
81	Fluidâ€“structure interaction simulations of the Fontan procedure using variable wall properties. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 513-527.	1.0	67
82	Wind turbine aerodynamics using ALEâ€“VMS: validation and the role of weakly enforced boundary conditions. Computational Mechanics, 2012, 50, 499-511.	2.2	138
83	Operator- and template-based modeling of solid geometry for Isogeometric Analysis with application to Vertical Axis Wind Turbine simulation. Computer Methods in Applied Mechanics and Engineering, 2012, 213-216, 71-83.	3.4	11
84	A computational procedure for prebending of wind turbine blades. International Journal for Numerical Methods in Engineering, 2012, 89, 323-336.	1.5	77
85	Stabilized spaceâ€“time computation of wind-turbine rotor aerodynamics. Computational Mechanics, 2011, 48, 333-344.	2.2	126
86	Numerical-performance studies for the stabilized spaceâ€“time computation of wind-turbine rotor aerodynamics. Computational Mechanics, 2011, 48, 647-657.	2.2	129
87	Blood vessel tissue prestress modeling for vascular fluidâ€“structure interaction simulation. Finite Elements in Analysis and Design, 2011, 47, 593-599.	1.7	165
88	Xâ€FEM in isogeometric analysis for linear fracture mechanics. International Journal for Numerical Methods in Engineering, 2011, 87, 541-565.	1.5	229
89	3D simulation of wind turbine rotors at full scale. Part I: Geometry modeling and aerodynamics. International Journal for Numerical Methods in Fluids, 2011, 65, 207-235.	0.9	288
90	3D simulation of wind turbine rotors at full scale. Part II: Fluidâ€“structure interaction modeling with composite blades. International Journal for Numerical Methods in Fluids, 2011, 65, 236-253.	0.9	379

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91	A large deformation, rotation-free, isogeometric shell. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1367-1378.	3.4	300
92	High-performance computing of wind turbine aerodynamics using isogeometric analysis. Computers and Fluids, 2011, 49, 93-100.	1.3	141
93	Improving stability of stabilized and multiscale formulations in flow simulations at small time steps. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 828-840.	3.4	199
94	Computational vascular fluidâ€"structure interaction: methodology and application to cerebral aneurysms. Biomechanics and Modeling in Mechanobiology, 2010, 9, 481-498.	1.4	210
95	A fully-coupled fluid-structure interaction simulation of cerebral aneurysms. Computational Mechanics, 2010, 46, 3-16.	2.2	206
96	A generalized finite element formulation for arbitrary basis functions: From isogeometric analysis to XFEM. International Journal for Numerical Methods in Engineering, 2010, 83, 765-785.	1.5	213
97	Isogeometric shell analysis: The Reissnerâ€"Mindlin shell. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 276-289.	3.4	551
98	The bending strip method for isogeometric analysis of Kirchhoffâ€"Love shell structures comprised of multiple patches. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 2403-2416.	3.4	419
99	Finite-Element Simulation of Incompressible Viscous Flows in Moving Meshes. Numerical Heat Transfer, Part B: Fundamentals, 2009, 56, 38-57.	0.6	1
100	Computational fluidâ€"structure interaction: methods and application to a total cavopulmonary connection. Computational Mechanics, 2009, 45, 77-89.	2.2	212
101	High-Fidelity Finite Element Mesh Generation for Fluid-Structure Interaction Analysis of Cerebral Aneurysms. , 2009, , .		1
102	A large deformation isogeometric continuum shell formulation incorporating finite strain elastoplasticity. Computational Mechanics, 0, , .	2.2	4