

# Ming-Chen Hsu

## List of Publications by Year in descending order

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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	Isogeometric shell analysis: The Reissner-Mindlin shell. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2010, 199, 276-289.	3.4	551
2	The bending strip method for isogeometric analysis of Kirchhoff-Love shell structures comprised of multiple patches. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2010, 199, 2403-2416.	3.4	419
3	3D simulation of wind turbine rotors at full scale. Part II: Fluid-structure interaction modeling with composite blades. <i>International Journal for Numerical Methods in Fluids</i> , 2011, 65, 236-253.	0.9	379
4	An immersogeometric variational framework for fluid-structure interaction: Application to bioprosthetic heart valves. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 284, 1005-1053.	3.4	350
5	A large deformation, rotation-free, isogeometric shell. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2011, 200, 1367-1378.	3.4	300
6	3D simulation of wind turbine rotors at full scale. Part I: Geometry modeling and aerodynamics. <i>International Journal for Numerical Methods in Fluids</i> , 2011, 65, 207-235.	0.9	288
7	Isogeometric fluid-structure interaction analysis with emphasis on non-matching discretizations, and with application to wind turbines. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2012, 249-252, 28-41.	3.4	278
8	Fluid-structure interaction modeling of wind turbines: simulating the full machine. <i>Computational Mechanics</i> , 2012, 50, 821-833.	2.2	253
9	Isogeometric Kirchhoff-Love shell formulations for general hyperelastic materials. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 291, 280-303.	3.4	245
10	Fluid-structure interaction analysis of bioprosthetic heart valves: significance of arterial wall deformation. <i>Computational Mechanics</i> , 2014, 54, 1055-1071.	2.2	240
11	X-FEM in isogeometric analysis for linear fracture mechanics. <i>International Journal for Numerical Methods in Engineering</i> , 2011, 87, 541-565.	1.5	229
12	A generalized finite element formulation for arbitrary basis functions: From isogeometric analysis to XFEM. <i>International Journal for Numerical Methods in Engineering</i> , 2010, 83, 765-785.	1.5	213
13	Computational fluid-structure interaction: methods and application to a total cavopulmonary connection. <i>Computational Mechanics</i> , 2009, 45, 77-89.	2.2	212
14	Computational vascular fluid-structure interaction: methodology and application to cerebral aneurysms. <i>Biomechanics and Modeling in Mechanobiology</i> , 2010, 9, 481-498.	1.4	210
15	Dynamic and fluid-structure interaction simulations of bioprosthetic heart valves using parametric design with T-splines and Fung-type material models. <i>Computational Mechanics</i> , 2015, 55, 1211-1225.	2.2	207
16	A fully-coupled fluid-structure interaction simulation of cerebral aneurysms. <i>Computational Mechanics</i> , 2010, 46, 3-16.	2.2	206
17	Improving stability of stabilized and multiscale formulations in flow simulations at small time steps. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2010, 199, 828-840.	3.4	199
18	Finite element simulation of wind turbine aerodynamics: validation study using NREL Phase VI experiment. <i>Wind Energy</i> , 2014, 17, 461-481.	1.9	167

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19	Blood vessel tissue prestress modeling for vascular fluid-structure interaction simulation. Finite Elements in Analysis and Design, 2011, 47, 593-599.	1.7	165
20	ALE-VMS AND ST-VMS METHODS FOR COMPUTER MODELING OF WIND-TURBINE ROTOR AERODYNAMICS AND FLUID-STRUCTURE INTERACTION. Mathematical Models and Methods in Applied Sciences, 2012, 22, .	1.7	148
21	High-performance computing of wind turbine aerodynamics using isogeometric analysis. Computers and Fluids, 2011, 49, 93-100.	1.3	141
22	Wind turbine aerodynamics using ALE-VMS: validation and the role of weakly enforced boundary conditions. Computational Mechanics, 2012, 50, 499-511.	2.2	138
23	Blended isogeometric shells. Computer Methods in Applied Mechanics and Engineering, 2013, 255, 133-146.	3.4	133
24	Numerical-performance studies for the stabilized space-time computation of wind-turbine rotor aerodynamics. Computational Mechanics, 2011, 48, 647-657.	2.2	129
25	STRUCTURAL MECHANICS MODELING AND FSI SIMULATION OF WIND TURBINES. Mathematical Models and Methods in Applied Sciences, 2013, 23, 249-272.	1.7	127
26	Stabilized space-time computation of wind-turbine rotor aerodynamics. Computational Mechanics, 2011, 48, 333-344.	2.2	126
27	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
28	Engineering Analysis and Design with ALE-VMS and Space-Time Methods. Archives of Computational Methods in Engineering, 2014, 21, 481-508.	6.0	105
29	Aerodynamic Simulation of Vertical-Axis Wind Turbines. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	1.1	97
30	A framework for designing patient-specific bioprosthetic heart valves using immersogeometric fluid-structure interaction analysis. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e2938.	1.0	93
31	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
32	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
33	Optimizing fluid-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
34	Penalty coupling of non-matching isogeometric Kirchhoff-Love shell patches with application to composite wind turbine blades. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 810-840.	3.4	84
35	An interactive geometry modeling and parametric design platform for isogeometric analysis. Computers and Mathematics With Applications, 2015, 70, 1481-1500.	1.4	83
36	Immersogeometric cardiovascular fluid-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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37	A computational procedure for prebending of wind turbine blades. <i>International Journal for Numerical Methods in Engineering</i> , 2012, 89, 323-336.	1.5	77
38	Modeling of a hydraulic arresting gear using fluid-structure interaction and isogeometric analysis. <i>Computers and Fluids</i> , 2017, 142, 3-14.	1.3	74
39	The non-symmetric Nitsche method for the parameter-free imposition of weak boundary and coupling conditions in immersed finite elements. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016, 309, 625-652.	3.4	71
40	Fluid-structure interaction simulations of the Fontan procedure using variable wall properties. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2012, 28, 513-527.	1.0	67
41	Heart valve isogeometric sequentially-coupled FSI analysis with the space-time topology change method. <i>Computational Mechanics</i> , 2020, 65, 1167-1187.	2.2	63
42	Direct immersogeometric fluid flow analysis using B-rep CAD models. <i>Computer Aided Geometric Design</i> , 2016, 43, 143-158.	0.5	62
43	A contact formulation based on a volumetric potential: Application to isogeometric simulations of atrioventricular valves. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 330, 522-546.	3.4	61
44	A framework for parametric design optimization using isogeometric Analysis. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2017, 316, 944-965.	3.4	59
45	An anisotropic constitutive model for immersogeometric fluid-structure interaction analysis of bioprosthetic heart valves. <i>Journal of Biomechanics</i> , 2018, 74, 23-31.	0.9	56
46	Projection-based stabilization of interface Lagrange multipliers in immersogeometric thin structure interaction analysis, with application to heart valve modeling. <i>Computers and Mathematics With Applications</i> , 2017, 74, 2068-2088.	1.4	54
47	Immersogeometric fluid-structure interaction modeling and simulation of transcatheter aortic valve replacement. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019, 357, 112556.	3.4	54
48	Computational methods for the aortic heart valve and its replacements. <i>Expert Review of Medical Devices</i> , 2017, 14, 849-866.	1.4	52
49	Thinner biological tissues induce leaflet flutter in aortic heart valve replacements. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 19007-19016.	3.3	50
50	An immersogeometric formulation for free-surface flows with application to marine engineering problems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 361, 112748.	3.4	49
51	The tetrahedral finite cell method: Higher-order immersogeometric analysis on adaptive non-boundary-fitted meshes. <i>International Journal for Numerical Methods in Engineering</i> , 2016, 107, 1054-1079.	1.5	42
52	Error estimates for projection-based dynamic augmented Lagrangian boundary condition enforcement, with application to fluid-structure interaction. <i>Mathematical Models and Methods in Applied Sciences</i> , 2018, 28, 2457-2509.	1.7	40
53	Computational investigation of left ventricular hemodynamics following bioprosthetic aortic and mitral valve replacement. <i>Mechanics Research Communications</i> , 2021, 112, 103604.	1.0	39
54	Stabilized methods for high-speed compressible flows: toward hypersonic simulations. <i>Computational Mechanics</i> , 2021, 67, 785-809.	2.2	38

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55	A Deep Learning Framework for Design and Analysis of Surgical Bioprosthetic Heart Valves. Scientific Reports, 2019, 9, 18560.	1.6	37
56	Computational Cardiovascular Flow Analysis with the Variational Multiscale Methods. Khoa Há»c á»©ng Dá»¥ng, 2019, 3, 366.	1.5	37
57	A framework for isogeometricâ€analysisâ€based optimization of wind turbine blade structures. Wind Energy, 2019, 22, 153-170.	1.9	36
58	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
59	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
60	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
61	Isogeometric analysis of ice accretion on wind turbine blades. Computational Mechanics, 2020, 66, 311-322.	2.2	33
62	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
63	Rapid B-rep model preprocessing for immersogeometric analysis using analytic surfaces. Computer Aided Geometric Design, 2017, 52-53, 190-204.	0.5	30
64	Immersogeometric analysis of moving objects in incompressible flows. Computers and Fluids, 2019, 189, 24-33.	1.3	30
65	Adjoint-based Control of Fluid-Structure Interaction for Computational Steering Applications. Procedia Computer Science, 2013, 18, 1989-1998.	1.2	29
66	A collocated $C^0$ 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
67	An octree-based immersogeometric approach for modeling inertial migration of particles in channels. Computers and Fluids, 2021, 214, 104764.	1.3	28
68	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
69	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
70	Parameterization, geometric modeling, and isogeometric analysis of tricuspid valves. Computer Methods in Applied Mechanics and Engineering, 2021, 384, 113960.	3.4	22
71	Optimizing Gas Turbine Performance Using the Surrogate Management Framework and High-Fidelity Flow Modeling. Energies, 2020, 13, 4283.	1.6	21
72	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

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73	ALE and Space-Time Variational Multiscale Isogeometric Analysis of Wind Turbines and Turbomachinery. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2020, , 195-233.	0.4	21
74	Analytical Study of Articulating Turbine Rotor Blade Concept for Improved Off-Design Performance of Gas Turbine Engines. <i>Journal of Engineering for Gas Turbines and Power</i> , 2017, 139, .	0.5	20
75	High-Fidelity Finite Element Modeling and Analysis of Adaptive Gas Turbine Stator-Rotor Flow Interaction at Off-Design Conditions. <i>Journal of Mechanics</i> , 2020, 36, 595-606.	0.7	20
76	A pilot <i>in silico</i> modeling-based study of the pathological effects on the biomechanical function of tricuspid valves. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2020, 36, e3346.	1.0	16
77	Industrial scale Large Eddy Simulations with adaptive octree meshes using immersogeometric analysis. <i>Computers and Mathematics With Applications</i> , 2021, 97, 28-44.	1.4	15
78	Blended isogeometric Kirchhoff-Love and continuum shells. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021, 385, 114005.	3.4	13
79	Simulating the time evolving geometry, mechanical properties, and fibrous structure of bioprosthetic heart valve leaflets under cyclic loading. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 123, 104745.	1.5	13
80	Operator- and template-based modeling of solid geometry for Isogeometric Analysis with application to Vertical Axis Wind Turbine simulation. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2012, 213-216, 71-83.	3.4	11
81	Mechanics of Porcine Heart Valves'™ Strut Chordae Tendineae Investigated as a Leaflet-Chordae-Papillary Muscle Entity. <i>Annals of Biomedical Engineering</i> , 2020, 48, 1463-1474.	1.3	9
82	Effects of membrane and flexural stiffnesses on aortic valve dynamics: Identifying the mechanics of leaflet flutter in thinner biological tissues. <i>Forces in Mechanics</i> , 2022, 6, 100053.	1.3	9
83	Immersogeometric Analysis of Bioprosthetic Heart Valves, Using the Dynamic Augmented Lagrangian Method. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2018, , 167-212.	0.4	8
84	Quantification of load-dependent changes in the collagen fiber architecture for the strut chordae tendineae-leaflet insertion of porcine atrioventricular heart valves. <i>Biomechanics and Modeling in Mechanobiology</i> , 2021, 20, 223-241.	1.4	8
85	Finite element methodology for modeling aircraft aerodynamics: development, simulation, and validation. <i>Computational Mechanics</i> , 2022, 70, 549-563.	2.2	8
86	Image-based patient-specific flow simulations are consistent with stroke in pediatric cerebrovascular disease. <i>Biomechanics and Modeling in Mechanobiology</i> , 2021, 20, 2071-2084.	1.4	7
87	Scalable adaptive PDE solvers in arbitrary domains. , 2021, , .		6
88	A large deformation isogeometric continuum shell formulation incorporating finite strain elastoplasticity. <i>Computational Mechanics</i> , 0, , .	2.2	4
89	Computational Engineering Analysis and Design with ALE-VMS and ST Methods. <i>Computational Methods in Applied Sciences (Springer)</i> , 2014, , 321-353.	0.1	3
90	Buffet-Induced Structural Response Prediction of Aircraft Horizontal Stabilizers Based on Immersogeometric Analysis and an Isogeometric Blended Shell Approach. , 2022, , .		3

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91	Isogeometric blended shells for dynamic analysis: simulating aircraft takeoff and the resulting fatigue damage on the horizontal stabilizer. <i>Computational Mechanics</i> , 2022, 70, 1013-1024.	2.2	3
92	Articulating Turbine Rotor Blade Concept for Improved Off-Design Performance of Gas Turbine Engines. , 2016, , .		2
93	An in-silico benchmark for the tricuspid heart valve â€™ Geometry, finite element mesh, Abaqus simulation, and result data set. <i>Data in Brief</i> , 2021, 39, 107664.	0.5	2
94	Finite Element Simulation and Validation for Aerospace Applications: Stabilized Methods, Weak Dirichlet Boundary Conditions, and Discontinuity Capturing for Compressible Flows. , 2022, , .		2
95	Finite-Element Simulation of Incompressible Viscous Flows in Moving Meshes. <i>Numerical Heat Transfer, Part B: Fundamentals</i> , 2009, 56, 38-57.	0.6	1
96	Fluidâ€™Structure Interaction Analysis of Bioprosthetic Heart Valves: the Application of a Computationally-Efficient Tissue Constitutive Model. , 2018, , 447-469.		1
97	Articulating Axial-Flow Turbomachinery Rotor Blade for Enabling Variable Speed Gas Turbine Engine. , 2018, , .		1
98	Optimizing Gas-Turbine Operation using Finite-Element CFD Modeling. , 2018, , .		1
99	High-Fidelity Finite Element Mesh Generation for Fluid-Structure Interaction Analysis of Cerebral Aneurysms. , 2009, , .		1
100	Fluidâ€™Structure Interaction Modeling and Isogeometric Analysis of a Hydraulic Arresting Gear at Full Scale. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2016, , 463-476.	0.4	0
101	An Immersogeometric Method for the Simulation of Turbulent Flow Around Complex Geometries. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2016, , 111-125.	0.4	0
102	Computational Finite Element Analysis of Adaptive Gas Turbine Stator-Rotor Flow Interactions for Future Vertical Lift Propulsion. , 2019, , .		0