Martin Fischer

List of Publications by Year
in descending order

97 papers	4,526 citations	172457 29 h-index	144013 57 g-index
98 all docs	98 docs citations	98 times ranked	2986 citing authors

#	Article	IF	Citations
1	Cost-based optimization of steel frame member sizing and connection type using dimension increasing search. Optimization and Engineering, 2022, 23, 1525-1558.	2.4	1
2	Digital Twin in Practice: Emergent Insights from an Ethnographic-Action Research Study. , 2022, , .		6
3	A Comparative Analysis of Production Metrics across VDC Implementations. , 2022, , .		4
4	Assessment Framework for Additive Manufacturing in the AEC Industry. Journal of Construction Engineering and Management - ASCE, 2022, 148, .	3.8	3
5	Digital Twin: From Concept to Practice. Journal of Management in Engineering - ASCE, 2022, 38, .	4.8	33
6	Impacts of Stacking Plans on Carbon Emissions during Transportation of Prefabricated Exterior Wall Panels. , 2022, , .		0
7	Methodology to estimate logistics costs for vertically transported prefabricated wall panels. Journal of Computational Design and Engineering, 2022, 9, 1348-1368.	3.1	2
8	Safety, quality, schedule, and cost impacts of ten construction robots. Construction Robotics, 2022, 6, 163-186.	2.2	11
9	A robot evaluation framework comparing on-site robots with traditional construction methods. Construction Robotics, 2022, 6, 187-206.	2.2	6
10	Role of Blockchain-Enabled Smart Contracts in Automating Construction Progress Payments. Journal of Legal Affairs and Dispute Resolution in Engineering and Construction, 2021, 13, .	1.4	90
11	Generation of stacking plans for prefabricated exterior wall panels shipped vertically with A-frames. Automation in Construction, 2021, 122, 103507.	9.8	13
12	Comparative Analysis of Manual and Robotic Concrete Drilling for Installation Hangers. Journal of Construction Engineering and Management - ASCE, 2021, 147, .	3.8	20
13	Automation of Inspection Mission Planning Using 4D BIMs and in Support of Unmanned Aerial Vehicleâ€"Based Data Collection. Journal of Construction Engineering and Management - ASCE, 2021, 147, .	3.8	25
14	Measuring Progress and Productivity in Model-Driven Engineering for Capital Project Delivery. Journal of Construction Engineering and Management - ASCE, 2021, 147, .	3.8	4
15	Empirical Study of Identifying Logistical Problems in Prefabricated Interior Wall Panel Construction. Journal of Management in Engineering - ASCE, 2021, 37, .	4.8	24
16	The application of blockchain-based crypto assets for integrating the physical and financial supply chains in the construction & engineering industry. Automation in Construction, 2021, 127, 103711.	9.8	64
17	Construction payment automation using blockchain-enabled smart contracts and robotic reality capture technologies. Automation in Construction, 2021, 132, 103926.	9.8	100
18	Measuring the impact of blockchain and smart contracts on construction supply chain visibility. Advanced Engineering Informatics, 2021, 50, 101444.	8.0	24

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19	Human-Robot Collaboration in Construction: Opportunities and Challenges. , 2020, , .		21
20	Generating a Daily Bill of Materials at Level of Development 400 Using the Smallest Workface Boundary. Journal of Construction Engineering and Management - ASCE, 2020, 146, 04020035.	3.8	1
21	A design-focused, cost-ranked, structural-frame sizing optimization. Journal of Building Engineering, 2020, 30, 101269.	3.4	3
22	Virtual design and construction. Construction Management and Economics, 2020, 38, 355-363.	3.0	24
23	Empirical Determination of the Smallest Batch Sizes for Daily Planning. Journal of Construction Engineering and Management - ASCE, 2020, 146, 04020011.	3.8	2
24	Daily plan-do-check-act (PDCA) cycles with level of development (LOD) 400 objects for foremen. Advanced Engineering Informatics, 2020, 44, 101091.	8.0	15
25	Comparison of Construction Robots and Traditional Methods for Drilling, Drywall, and Layout Tasks. , 2020, , .		8
26	Is Too Much System Caution Counterproductive? Effects of Varying Sensitivity and Automation Levels in Vehicle Collision Avoidance Systems. , 2020, , .		8
27	A Method to Provide Integrated Design through Systems-Level Automation. , 2019, , .		0
28	The Car That Cried Wolf: Driver Responses to Missing, Perfectly Performing, and Oversensitive Collision Avoidance Systems. , 2019, , .		3
29	Evaluation of Reshuffling Efforts to Comply with Installation Sequences of Prefabricated Interior Wall Panels from Bunks Delivered On Site. , 2019, , .		4
30	3D Scene Graph: A Structure for Unified Semantics, 3D Space, and Camera. , 2019, , .		115
31	Guiding building professionals in selecting additive manufacturing technologies to produce building components. Materials Today Communications, 2018, 15, 199-202.	1.9	8
32	Construction Parts in Building Projects: Definition and Case Study. Journal of Management in Engineering - ASCE, 2018, 34, 04018014.	4.8	10
33	UAV Mission Planning Using Swarm Intelligence and 4D BIMs in Support of Vision-Based Construction Progress Monitoring and As-Built Modeling. , 2018, , .		3
34	UAV-Enabled Site-to-BIM Automation: Aerial Robotic- and Computer Vision-Based Development of As-Built/As-Is BIMs and Quality Control. , 2018, , .		13
35	Parametric analysis of design stage building energy performance simulation models. Energy and Buildings, 2018, 172, 78-93.	6.7	36
36	An analytical method to estimate the total installed cost of structural steel building frames during early design. Journal of Building Engineering, 2018, 15, 41-50.	3.4	23

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37	Formal representation of cost and duration estimates for hard rock tunnel excavation. Automation in Construction, 2018, 96, 337-349.	9.8	1
38	Generation and evaluation of excavation schedules for hard rock tunnels in preconstruction and construction. Automation in Construction, 2018, 96, 378-397.	9.8	5
39	Model Maturity Risk Index Framework for Tracking Progress in Model-Based Engineering. , 2018, , .		2
40	Making Each Workhour Count: Improving the Prediction of Construction Durations and Resource Allocations. Lecture Notes in Computer Science, 2018, , 273-295.	1.3	8
41	Learning movement patterns of the occupant in smart home environments: an unsupervised learning approach. Journal of Ambient Intelligence and Humanized Computing, 2017, 8, 133-146.	4.9	16
42	Field Study on the Connection between BIM and Daily Work Orders. Journal of Construction Engineering and Management - ASCE, 2017, 143, .	3.8	9
43	Integrating Project Delivery. , 2017, , .		67
44	ASSESSMENT OF ADDITIVE AND CONVENTIONAL MANUFACTURING: CASE STUDIES FROM THE AEC INDUSTRY. Proceedings of International Structural Engineering and Construction, 2017, 4, .	0.1	7
45	A Construction Workflow Model for Analyzing the Impact of In-Project Variability. , 2016, , .		8
46	A method to estimate climate-critical construction materials applied to seaport protection. Global Environmental Change, 2016, 40, 125-136.	7.8	19
47	3D Semantic Parsing of Large-Scale Indoor Spaces. , 2016, , .		820
48	Automated updating of space design requirements connecting user activities and space types. Automation in Construction, 2015, 50, 102-110.	9.8	16
49	Ranking appliance energy efficiency in households: Utilizing smart meter data and energy efficiency frontiers to estimate and identify the determinants of appliance energy efficiency in residential buildings. Energy and Buildings, 2015, 99, 220-230.	6.7	54
50	BIM-based decision-support method for master planning of sustainable large-scale developments. Automation in Construction, 2015, 58, 95-108.	9.8	51
51	Semiautomated Scaffolding Planning: Development of the Feature Lexicon for Computer Application. Journal of Computing in Civil Engineering, 2015, 29, .	4.7	12
52	Towards seaport resilience for climate change adaptation: Stakeholder perceptions of hurricane impacts in Gulfport (MS) and Providence (RI). Progress in Planning, 2015, 99, 1-49.	4.3	60
53	CAD-Centric Attribution Methodology for Multidisciplinary Optimization Environments: Enabling Parametric Attribution for Efficient Design Space Formulation and Evaluation. Journal of Computing in Civil Engineering, 2014, 28, 284-296.	4.7	4
54	Application of Design Scenarios Methodology to Evaluate the Effectiveness of Transparent Parametric Design Spaces. Journal of Architectural Engineering, 2014, 20, 04013009.	1.6	0

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55	A bi-level hierarchical method for shape and member sizing optimization of steel truss structures. Computers and Structures, 2014, 131, 1-11.	4.4	16
56	Sharing of Temporary Structures: Formalization and Planning Application. Automation in Construction, 2014, 43, 187-194.	9.8	10
57	Automated Generation of User Activity–Space Pairs in Space-Use Analysis. Journal of Construction Engineering and Management - ASCE, 2014, 140, .	3.8	12
58	Ontology for Representing Building Users' Activities in Space-Use Analysis. Journal of Construction Engineering and Management - ASCE, 2014, 140, .	3.8	19
59	Fully Constrained Design: A general and scalable method for discrete member sizing optimization of steel truss structures. Computers and Structures, 2014, 140, 55-65.	4.4	30
60	A method to automate look-ahead schedule (LAS) generation for the finishing phase of construction projects. Automation in Construction, 2013, 35, 157-173.	9.8	17
61	A knowledge-based framework for automated space-use analysis. Automation in Construction, 2013, 32, 165-176.	9.8	27
62	Determinants of residential electricity consumption: Using smart meter data to examine the effect of climate, building characteristics, appliance stock, and occupants' behavior. Energy, 2013, 55, 184-194.	8.8	439
63	Is adaptation sustainable?. Construction Innovation, 2013, 13, 202-216.	2.7	6
64	A genetic algorithm-based method for look-ahead scheduling in the finishing phase of construction projects. Advanced Engineering Informatics, 2012, 26, 737-748.	8.0	19
65	BIM-Centric Daylight Profiler for Simulation (BDP4SIM): A methodology for automated product model decomposition and recomposition for climate-based daylighting simulation. Building and Environment, 2012, 58, 114-134.	6.9	34
66	A method to compare simulated and measured data to assess building energy performance. Building and Environment, 2012, 56, 241-251.	6.9	52
67	Method to produce field instructions from product and process models for cast-in-place concrete operations. Automation in Construction, 2012, 22, 233-246.	9.8	13
68	Climate change impacts on international seaports: knowledge, perceptions, and planning efforts among port administrators. Climatic Change, 2012, 110, 5-29.	3.6	184
69	Can we grow buildings? Concepts and requirements for automated nano- to meter-scale building. Advanced Engineering Informatics, 2011, 25, 390-398.	8.0	27
70	Teaching construction project management with BIM support: Experience and lessons learned. Automation in Construction, 2011, 20, 115-125.	9.8	114
71	Research in Visualization Techniques for Field Construction. Journal of Construction Engineering and Management - ASCE, 2011, 137, 853-862.	3.8	83
72	Closure to "Areas of Application for 3D and 4D Models on Construction Projects" by Timo Hartmann, Ju Gao, and Martin Fischer. Journal of Construction Engineering and Management - ASCE, 2010, 136, 932-934.	3.8	2

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73	Implementing information systems with project teams using ethnographic–action research. Advanced Engineering Informatics, 2009, 23, 57-67.	8.0	98
74	Reshaping the Life Cycle Process with Virtual Design and Construction Methods. , 2009, , 104-112.		3
75	Quantitative analysis of workflow, temporary structure usage, and productivity using 4D models. Automation in Construction, 2008, 17, 780-791.	9.8	41
76	Areas of Application for 3D and 4D Models on Construction Projects. Journal of Construction Engineering and Management - ASCE, 2008, 134, 776-785.	3.8	215
77	Formalization of the Features of Activities and Classification of Temporary Structures to Support an Automated Temporary Structure Planning. , 2007, , 338.		11
78	Supporting the constructability review with 3D/4D models. Building Research and Information, 2007, 35, 70-80.	3.9	92
79	A formal identification and re-sequencing process for developing sequencing alternatives in CPM schedules. Automation in Construction, 2007, 17, 75-89.	9.8	19
80	Formalizing Construction Knowledge for Concurrent Performance-Based Design. Lecture Notes in Computer Science, 2006, , 186-205.	1.3	28
81	Narratives: Extensible Distributed Multidisciplinary Parametric Models. , 2005, , 1.		0
82	Perspectors: composable, reusable reasoning modules to construct an engineering view from other engineering views. Advanced Engineering Informatics, 2004, 18, 49-67.	8.0	26
83	Capitalizing on early project decision-making opportunities to improve facility design, construction, and life-cycle performance—POP, PM4D, and decision dashboard approaches. Automation in Construction, 2004, 13, 53-65.	9.8	49
84	THE SCOPE AND ROLE OF INFORMATION TECHNOLOGY IN CONSTRUCTION. Doboku Gakkai Ronbunshu, 2004, 2004, 1-31.	0.2	62
85	A generic feature-driven activity-based cost estimation process. Advanced Engineering Informatics, 2003, 17, 23-39.	8.0	53
86	A feature ontology to support construction cost estimating. Artificial Intelligence for Engineering Design, Analysis and Manufacturing: AIEDAM, 2003, 17, 133-154.	1.1	33
87	An Ontology for Relating Features with Activities to Calculate Costs. Journal of Computing in Civil Engineering, 2003, 17, 243-254.	4.7	44
88	Closure to "Feasibility Study of 4D CAD in Commercial Construction" by Bonsang Koo and Martin Fischer. Journal of Construction Engineering and Management - ASCE, 2002, 128, 274-275.	3.8	2
89	Representing Work Spaces Generically in Construction Method Models. Journal of Construction Engineering and Management - ASCE, 2002, 128, 296-305.	3.8	64
90	Automated Generation of Work Spaces Required by Construction Activities. Journal of Construction Engineering and Management - ASCE, 2002, 128, 306-315.	3.8	140

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91	An Automated Approach for Accounting for Spaces Required by Construction Activities. , 2000, , 1.		6
92	Formalisms and Mechanisms Needed to Maintain Cost Estimates Based on an IFC Product Model. , 2000, , 716.		4
93	4-D Workplanner: A Prototype System for Automated Generation of Construction Spaces and Analysis of Time-Space Conflicts. , 2000, , 740.		10
94	Feasibility Study of 4D CAD in Commercial Construction. Journal of Construction Engineering and Management - ASCE, 2000, 126, 251-260.	3.8	331
95	Virtual components consisting of form, function and behavior. Automation in Construction, 1999, 8, 351-367.	9.8	19
96	Generating, evaluating and visualizing construction schedules with CAD tools. Automation in Construction, 1998, 7, 433-447.	9.8	122
97	Strategy for Computer Integrated Construction Technology. Journal of Construction Engineering and Management - ASCE, 1994, 120, 117-131.	3.8	63