Alejandra J Magana

List of Publications by Year
in descending order

120	1,220	430874	477307
papers	citations	18 h-index	29 g-index

122	122	122	896
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A Review of Simulators with Haptic Devices for Medical Training. Journal of Medical Systems, 2016, 40, 104.	3.6	152
2	A Survey of Scholarly Literature Describing the Field of Bioinformatics Education and Bioinformatics Educational Research. CBE Life Sciences Education, 2014, 13, 607-623.	2.3	63
3	Computational thinking in higher education: A review of the literature. Computer Applications in Engineering Education, 2020, 28, 1174-1189.	3.4	50
4	Modeling and simulation practices for a computational thinkingâ€enabled engineering workforce. Computer Applications in Engineering Education, 2017, 25, 62-78.	3.4	47
5	Introducing Discipline-Based Computing in Undergraduate Engineering Education. ACM Transactions on Computing Education, 2013, 13, 1-22.	3.5	37
6	A case study of undergraduate engineering students' computational literacy and self-beliefs about computing in the context of authentic practices. Computers in Human Behavior, 2016, 61, 427-442.	8.5	36
7	Investigating the affordances of a CAD enabled learning environment for promoting integrated STEM learning. Computers and Education, 2019, 129, 122-142.	8.3	35
8	Characterizing Engineering Learnersâ€™ Preferences for Active and Passive Learning Methods. IEEE Transactions on Education, 2018, 61, 46-54.	2.4	34
9	Writing In-Code Comments to Self-Explain in Computational Science and Engineering Education. ACM Transactions on Computing Education, 2017, 17, 1-21.	3.5	31
10	An Integrated Knowledge Framework to Characterize and Scaffold Size and Scale Cognition (FS2C). International Journal of Science Education, 2012, 34, 2181-2203.	1.9	29
11	Using Learning Analytics to Characterize Student Experimentation Strategies in the Context of Engineering Design. Journal of Learning Analytics, 2016, 3, 291-317.	2.4	29
12	Modeling and simulation practices in engineering education. Computer Applications in Engineering Education, 2018, 26, 731-738.	3.4	29
13	Instructors' Intended Learning Outcomes for Using Computational Simulations as Learning Tools. Journal of Engineering Education, 2012, 101, 220-243.	3.0	28
14	Student Explanations in the Context of Computational Science and Engineering Education. Cognition and Instruction, 2019, 37, 201-231.	2.9	24
15	Learning strategies and multimedia techniques for scaffolding size andÂscale cognition. Computers and Education, 2014, 72, 367-377.	8.3	23
16	The landscape of PreK-12 engineering online resources for teachers: global trends. International Journal of STEM Education, 2015, 2, .	5.0	23
17	Modeling and Simulation in Engineering Education: A Learning Progression. Journal of Professional Issues in Engineering Education and Practice, 2017, 143, .	0.9	23
18	Computational simulations as virtual laboratories for online engineering education: A case study in the field of thermoelectricity. Computer Applications in Engineering Education, 2016, 24, 428-442.	3.4	22

#	Article	IF	Citations
19	Affordances and challenges of computational tools for supporting modeling and simulation practices. Computer Applications in Engineering Education, 2017, 25, 352-375.	3.4	20
20	Studentsâ€™ Development of Representational Competence Through the Sense of Touch. Journal of Science Education and Technology, 2017, 26, 332-346.	3.9	20
21	Teamwork facilitation and conflict resolution training in a <scp>HyFlex</scp> course during the <scp>COVID</scp>â€19 pandemic. Journal of Engineering Education, 2022, 111, 446-473.	3.0	20
22	Unpacking students' conceptualizations through haptic feedback. Journal of Computer Assisted Learning, 2017, 33, 513-531.	5.1	18
23	Undergraduate studentsâ€™ conceptual interpretation and perceptions of haptic-enabled learning experiences. International Journal of Educational Technology in Higher Education, 2017, 14, .	7.6	18
24	Characterizing the interplay of cognitive and metacognitive knowledge in computational modeling and simulation practices. Journal of Engineering Education, 2019, 108, 276-303.	3.0	18
25	A sequenced multimodal learning approach to support students' development of conceptual learning. Journal of Computer Assisted Learning, 2019, 35, 516-528.	5.1	18
26	Integrating Computational Science Tools into a Thermodynamics Course. Journal of Science Education and Technology, 2018, 27, 322-333.	3.9	16
27	Exploring Design Characteristics of Worked Examples to Support Programming and Algorithm Design. Journal of Computational Science Education, 2015, 6, 2-15.	0.3	15
28	Motivation, Awareness, and Perceptions of Computational Science. Computing in Science and Engineering, 2012, 14, 74-79.	1.2	13
29	Exploring Undergraduate Studentsâ€™ Computational Modeling Abilities and Conceptual Understanding of Electric Circuits. IEEE Transactions on Education, 2018, 61, 204-213.	2.4	13
30	Investigating the Impact of Using a CAD Simulation Tool on Studentsâ€™ Learning of Design Thinking. Journal of Science Education and Technology, 2018, 27, 334-347.	3.9	13
31	The use of engineering modelâ€building activities to elicit computational thinking: A designâ€based research study. Journal of Engineering Education, 2021, 110, 184-206.	3.0	13
32	Supporting student reflective practices through modelling-based learning assignments. European Journal of Engineering Education, 2021, 46, 987-1006.	2.3	13
33	Published research on pre-college studentsâ€™ and teachersâ€™ nanoscale science, engineering, and technology learning. Nanotechnology Reviews, 2015, 4, .	5.8	12
34	A Review of Training and Guidance Systems in Medical Surgery. Applied Sciences (Switzerland), 2020, 10, 5752.	2.5	11
35	Toward computational apprenticeship: Bringing a constructivist agenda to computational pedagogy. Journal of Engineering Education, 2020, 109, 170-176.	3.0	11
36	Analyzing Studentsâ€™ Computational Thinking Practices in a First-Year Engineering Course. IEEE Access, 2021, 9, 33041-33050.	4.2	11

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37	Improving the learning of physics concepts by using haptic devices. , 2015, , .		10
38	Characterizing the psychosocial effects of participating in a year-long residential research-oriented learning community. Current Psychology, 2023, 42, 2850-2867.	2.8	10
39	Systematic Review of Multimodal Humanâ€“Computer Interaction. Informatics, 2022, 9, 13.	3.9	10
40	Students' experimentation strategies in design: Is process data enough?. Computer Applications in Engineering Education, 2018, 26, 1903-1914.	3.4	9
41	Visuohaptic experiments: Exploring the effects of visual and haptic feedback on studentsâ€™ learning of friction concepts. Computer Applications in Engineering Education, 2019, 27, 1376-1401.	3.4	9
42	The Role of Simulation-Enabled Design Learning Experiences on Middle School Studentsâ€™ Self-generated Inherence Heuristics. Journal of Science Education and Technology, 2019, 28, 382-398.	3.9	9
43	Characterizing Team Orientations and Academic Performance in Cooperative Project-Based Learning Environments. Education Sciences, 2021, 11, 520.	2.6	9
44	A Systematic Review of Literature on the Effectiveness of Intelligent Tutoring Systems in STEM. , 2021, , .		8
45	Exploration of affordances of visuo-haptic simulations to learn the concept of friction. , 2017, , .		7
46	Investigating Studentsâ€™ Habits of Mind in a Course on Digital Signal Processing. IEEE Transactions on Education, 2019, 62, 312-324.	2.4	7
47	Exploring Studentsâ€™ Experimentation Strategies in Engineering Design Using an Educational CAD Tool. Journal of Science Education and Technology, 2019, 28, 195-208.	3.9	7
48	Understanding the Interactions between the Scrum Master and the Development Team: A Game-Theoretic Approach. Mathematics, 2020, 8, 1553.	2.2	7
49	Undergraduate Engineering Studentsâ€™ Types and Quality of Knowledge Used in Synthetic Modeling. Cognition and Instruction, 2020, 38, 503-537.	2.9	7
50	Providing students with agency to self-scaffold in a computational science and engineering course. Journal of Computing in Higher Education, 2021, 33, 328-366.	6.1	7
51	Investigating Studentsâ€™ Explanations about Friction Concepts after Interacting with a Visuohaptic Simulation with Two Different Sequenced Approaches. Journal of Science Education and Technology, 2020, 29, 443-458.	3.9	7
52	Classroom orchestration of computer simulations for science and engineering learning: a multiple-case study approach. International Journal of Science Education, 2021, 43, 1140-1171.	1.9	7
53	Using machine learning to predict engineering technology studentsâ€™ success with computerâ€aided design. Computer Applications in Engineering Education, 2022, 30, 852-862.	3.4	7
54	Emotional and cognitive effects of learning with computer simulations and computer videogames. Journal of Computer Assisted Learning, 2022, 38, 875-891.	5.1	7

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55	The role of frameworks in engineering education research. Journal of Engineering Education, 2022, 111, 9-13.	3.0	7
56	Identifying the impact of the SPIRIT program in student knowledge, attitudes, and perceptions toward computing careers. , 2012, , .		4
57	Designing hybrid physics labs: combining simulation and experiment for teaching computational thinking in first-year engineering. , 2019, , .		4
58	Characterizing students' arguments and explanations of a disciplineâ€based computational modeling activity. Computer Applications in Engineering Education, 2020, 28, 837-852.	3.4	4
59	In-code Comments as a Self-explanation Strategy for Computational Science Education. , 0, , .		4
60	Combining handsâ€on and virtual experiments for enhancing fluid mechanics teaching: A designâ€based research study. Computer Applications in Engineering Education, 2022, 30, 1701-1724.	3.4	4
61	SugarAid 0.2: An Online Learning Tool for STEM. , 2010, , .		3
62	Using backwards design process for the design and implementation of computer science (CS) principles: A case study of a colombian elementary and secondary teacher development program. , 2013, , .		3
63	Investigating the Impact of an Educational CAD Modeling Tool on Student Design Thinking. , 0, , .		3
64	Using pattern recognition techniques to analyze educational data. , 2017, , .		3
65	Work in progress — A transparency and scaffolding framework for computational simulation tools. , 2011, , .		2
66	Addâ€on Preferential Groups (APG): Analyzing student preferences of teaching methods. Computer Applications in Engineering Education, 2018, 26, 1020-1032.	3.4	2
67	Visuo-haptic Simulations to Improve Studentsâ€™ Understanding of Friction Concepts. , 2018, , .		2
68	Designing a Visuohaptic Simulation to Promote Graphical Representations and Conceptual Understanding of Structural Analysis. , 2018, , .		2
69	A Principled Approach to Using Machine Learning in Qualitative Education Research. , 2018, , .		2
70	Students' Use of Metacognitive Skills in Undergraduate Research Experiences in Computational Modeling. , 2019, , .		2
71	Materials Science Studentsâ€™ Perceptions and Usage Intentions of Computation. , 0, , .		2
72	Board # 39 : Identifying Affordances of Physical Manipulative Tools for the Design of Visuo-haptic Simulations. , 0, , .		2

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73	Computational Thinking as a Practice of Representation: A Proposed Learning and Assessment Framework. Journal of Computational Science Education, 2016, 7, 21-30.	0.3	2
74	Exploring Undergraduate Studentsâ€™ Computational Literacy in the Context of Problem Solving. , 0, , .		2
75	First-year undergraduate studentsâ€™ economic decision outcomes in engineering design. Engineering Economist, 2022, 67, 306-324.	1.1	2
76	Engineering in Early Education: a Multicultural Comparison of Web Resources. , 0, , .		2
77	Pedagogical approaches for eliciting studentsâ€™ design thinking strategies: tell-and-practice vs. contrasting cases. International Journal of Technology and Design Education, 2023, 33, 1087-1119.	2.6	2
78	Hybrid Learning Styles. , 2015, , 26.868.1.		1
79	Learning Style Dynamics. , 2015, , 26.1076.1.		1
80	A Framework for Measuring the Impact and Effectiveness of the NEES Cyberinfrastructure for Earthquake Engineering. , 2014, , .		1
81	Exploring students' experimentation strategies in engineering design using an educational CAD tool. , 2016, , .		1
82	Understanding faculty decisions about the integration of laboratories into engineering education. , 2017, , .		1
83	Using Computational Methods to Analyze Educational Data. , 2019, , .		1
84	Effects of Self-explanations as Scaffolding Tool for Learning Computer Programming. , 2019, , .		1
85	A Qualitative Study of Integrated Computing Experiences and Career Development in Community College Engineering Students. , 2019, , .		1
86	Investigating Teacherâ€™s Technological Pedagogical Content Knowledge in a CAD-enabled Learning Environment. , 0, , .		1
87	Work in Progress: Designing Modeling-based Learning Experiences Within a Capstone Engineering Course. , 0, , .		1
88	Undergraduate Engineering Studentsâ€™ Representational Competence of Circuits Analysis and Optimization: An Exploratory Study. , 0, , .		1
89	Enhancing Student Meaning-Making of Threshold Concepts via Computation: The Case of Mohrâ€™s Circle. , 0, , .		1
90	Colombian Elementary Studentsâ€™ Performance and Perceptions of Computing Learning Activities with Scratch. , 0, , .		1

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91	The Use of MATLAB Live as a Technology-enabled Learning Environment for Computational Modeling Activities within a Capstone Engineering Course. , 0, , .		1
92	Investigating the Impact of Visuohaptic Simulations for Conceptual Understanding in Electricity and Magnetism. , 0, , .		1
93	An Exploratory Survey on User Perceptions and Adoption of NEES.org. , 0, , .		1
94	Making Sense of Nanoscale Phenomena: A Proposed Model of Knowledge and Thinking. , 0, , .		1
95	Board # 11 : Investigating Engineering Students Habits of Mind: A Case Study Approach. , 0, , .		1
96	Studentsâ€™ Understanding of Computational Problem-Solving Tasks. , 0, , .		1
97	Thinking in a brand new way: Exploring the epistemology of nanotechnology researchers. , 2010, , .		0
98	Work in progress — Integrating computational and engineering thinking through online design and simulation of multidisciplinary systems. , 2011, , .		0
99	Work in progress: STEM-based computing educational resources on the web. , 2012, , .		0
100	A cross-cultural comparison study: The effectiveness of schema training modules among Hispanic students. , 2012, , .		0
101	An exploratory survey on the use of computation in undergraduate engineering education. , 2013, , .		0
102	Supporting Computational Apprenticeship Through Educational and Software Infrastructure: A Case Study in aÂMathematical Oncology Research Lab. Primus, 2022, 32, 446-467.	0.5	0
103	Investigating teachers' enactment of engineering design practices in a CAD simulationâ€enhanced learning environment. Computer Applications in Engineering Education, 0, , .	3.4	0
104	A learnerâ€centered approach for designing visuohaptic simulations for conceptual understanding of truss structures. Computer Applications in Engineering Education, 0, , .	3.4	0
105	Tool-Based Curricula and Visual Learning. Electronics, 2014, 17, .	0.3	0
106	A Study of Perceptions, Usability and Future Adoption of a Web-based Learning Tool. International Journal of Technology Diffusion, 2014, 5, 69-90.	0.3	0
107	Impact of Argumentation Scaffolds in Contrasting Designs Tasks on Elementary Pre-Service Teachers' Use of Science Ideas in Engineering Design. , 0, , .		0
108	Characterizing Studentsâ€™ Design Strategies During Simulation-based Engineering of Sustainable Buildings. , 0, , .		0

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109	The Effect of ElectronixTutor on Undergraduate Students' Acquisition of Conceptual Learning, Problem Solving, and Model Building of Electronic Circuits. , 2021, , .		0
110	Student challenges, strategies, and learning within the Data Mine Learning Community. , 2021, , .		0
111	Professional Development in Computational Thinking for teachers in Colombia. , 2021, , .		0
112	Innovation through Propagation: Using Technology to Enhance Learning and Propagation. , 0, , .		0
113	The Effect of Person and Thing Orientation on the Experience of Haptics. , 0, , .		0
114	AN ENGINEERING APPROACH FOR CONTINUOUS IMPROVEMENT IN ENGINEERING EDUCATION. , 0, , .		0
115	A Guided Inquiry-Based Learning Approach to High Performance Computer Graphics Education. , 0, , .		0
116	The Interplay Between Engineering Students' Modeling and Simulation Practices and Their Use of External Representations: An Exploratory Study. , 0, , .		0
117	Exploring Student Computational Practices in Solving Complex Engineering Design Problems. , 0, , .		0
118	Employing Model-Eliciting Activities in Cybersecurity Education. , 0, , .		0
119	Sustainability Competencies in STEM Education at Secondary Schools: A Systematized Literature Review. , 0, , .		0
120	TITLE: Rethinking the Gateway Computing Curriculum Across Engineering Disciplines. , 0, , .		0