

Alejandra J Magana

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/534859/publications.pdf>

Version: 2024-02-01

120
papers

1,220
citations

430442

18
h-index

476904

29
g-index

122
all docs

122
docs citations

122
times ranked

896
citing authors

#	ARTICLE	IF	CITATIONS
1	A Review of Simulators with Haptic Devices for Medical Training. <i>Journal of Medical Systems</i> , 2016, 40, 104.	2.2	152
2	A Survey of Scholarly Literature Describing the Field of Bioinformatics Education and Bioinformatics Educational Research. <i>CBE Life Sciences Education</i> , 2014, 13, 607-623.	1.1	63
3	Computational thinking in higher education: A review of the literature. <i>Computer Applications in Engineering Education</i> , 2020, 28, 1174-1189.	2.2	50
4	Modeling and simulation practices for a computational thinking-enabled engineering workforce. <i>Computer Applications in Engineering Education</i> , 2017, 25, 62-78.	2.2	47
5	Introducing Discipline-Based Computing in Undergraduate Engineering Education. <i>ACM Transactions on Computing Education</i> , 2013, 13, 1-22.	2.9	37
6	A case study of undergraduate engineering students' computational literacy and self-beliefs about computing in the context of authentic practices. <i>Computers in Human Behavior</i> , 2016, 61, 427-442.	5.1	36
7	Investigating the affordances of a CAD enabled learning environment for promoting integrated STEM learning. <i>Computers and Education</i> , 2019, 129, 122-142.	5.1	35
8	Characterizing Engineering Learners' Preferences for Active and Passive Learning Methods. <i>IEEE Transactions on Education</i> , 2018, 61, 46-54.	2.0	34
9	Writing In-Code Comments to Self-Explain in Computational Science and Engineering Education. <i>ACM Transactions on Computing Education</i> , 2017, 17, 1-21.	2.9	31
10	An Integrated Knowledge Framework to Characterize and Scaffold Size and Scale Cognition (FS2C). <i>International Journal of Science Education</i> , 2012, 34, 2181-2203.	1.0	29
11	Using Learning Analytics to Characterize Student Experimentation Strategies in the Context of Engineering Design. <i>Journal of Learning Analytics</i> , 2016, 3, 291-317.	1.8	29
12	Modeling and simulation practices in engineering education. <i>Computer Applications in Engineering Education</i> , 2018, 26, 731-738.	2.2	29
13	Instructors' Intended Learning Outcomes for Using Computational Simulations as Learning Tools. <i>Journal of Engineering Education</i> , 2012, 101, 220-243.	1.9	28
14	Student Explanations in the Context of Computational Science and Engineering Education. <i>Cognition and Instruction</i> , 2019, 37, 201-231.	1.9	24
15	Learning strategies and multimedia techniques for scaffolding size and scale cognition. <i>Computers and Education</i> , 2014, 72, 367-377.	5.1	23
16	The landscape of PreK-12 engineering online resources for teachers: global trends. <i>International Journal of STEM Education</i> , 2015, 2, .	2.7	23
17	Modeling and Simulation in Engineering Education: A Learning Progression. <i>Journal of Professional Issues in Engineering Education and Practice</i> , 2017, 143, .	0.9	23
18	Computational simulations as virtual laboratories for online engineering education: A case study in the field of thermoelectricity. <i>Computer Applications in Engineering Education</i> , 2016, 24, 428-442.	2.2	22

#	ARTICLE	IF	CITATIONS
19	Affordances and challenges of computational tools for supporting modeling and simulation practices. <i>Computer Applications in Engineering Education</i> , 2017, 25, 352-375.	2.2	20
20	Students'™ Development of Representational Competence Through the Sense of Touch. <i>Journal of Science Education and Technology</i> , 2017, 26, 332-346.	2.4	20
21	Teamwork facilitation and conflict resolution training in a <scp>HyFlex</scp> course during the <scp>COVID</scp>â€19 pandemic. <i>Journal of Engineering Education</i> , 2022, 111, 446-473.	1.9	20
22	Unpacking students' conceptualizations through haptic feedback. <i>Journal of Computer Assisted Learning</i> , 2017, 33, 513-531.	3.3	18
23	Undergraduate students'™ conceptual interpretation and perceptions of haptic-enabled learning experiences. <i>International Journal of Educational Technology in Higher Education</i> , 2017, 14, .	4.5	18
24	Characterizing the interplay of cognitive and metacognitive knowledge in computational modeling and simulation practices. <i>Journal of Engineering Education</i> , 2019, 108, 276-303.	1.9	18
25	A sequenced multimodal learning approach to support students' development of conceptual learning. <i>Journal of Computer Assisted Learning</i> , 2019, 35, 516-528.	3.3	18
26	Integrating Computational Science Tools into a Thermodynamics Course. <i>Journal of Science Education and Technology</i> , 2018, 27, 322-333.	2.4	16
27	Exploring Design Characteristics of Worked Examples to Support Programming and Algorithm Design. <i>Journal of Computational Science Education</i> , 2015, 6, 2-15.	0.3	15
28	Motivation, Awareness, and Perceptions of Computational Science. <i>Computing in Science and Engineering</i> , 2012, 14, 74-79.	1.2	13
29	Exploring Undergraduate Students'™ Computational Modeling Abilities and Conceptual Understanding of Electric Circuits. <i>IEEE Transactions on Education</i> , 2018, 61, 204-213.	2.0	13
30	Investigating the Impact of Using a CAD Simulation Tool on Students'™ Learning of Design Thinking. <i>Journal of Science Education and Technology</i> , 2018, 27, 334-347.	2.4	13
31	The use of engineering modelâ€building activities to elicit computational thinking: A designâ€based research study. <i>Journal of Engineering Education</i> , 2021, 110, 184-206.	1.9	13
32	Supporting student reflective practices through modelling-based learning assignments. <i>European Journal of Engineering Education</i> , 2021, 46, 987-1006.	1.5	13
33	Published research on pre-college students'™ and teachers'™ nanoscale science, engineering, and technology learning. <i>Nanotechnology Reviews</i> , 2015, 4, .	2.6	12
34	A Review of Training and Guidance Systems in Medical Surgery. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 5752.	1.3	11
35	Toward computational apprenticeship: Bringing a constructivist agenda to computational pedagogy. <i>Journal of Engineering Education</i> , 2020, 109, 170-176.	1.9	11
36	Analyzing Students'™ Computational Thinking Practices in a First-Year Engineering Course. <i>IEEE Access</i> , 2021, 9, 33041-33050.	2.6	11

#	ARTICLE	IF	CITATIONS
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. <i>Current Psychology</i> , 2023, 42, 2850-2867.	1.7	10
39	Systematic Review of Multimodal Human-Computer Interaction. <i>Informatics</i> , 2022, 9, 13.	2.4	10
40	Students' experimentation strategies in design: Is process data enough?. <i>Computer Applications in Engineering Education</i> , 2018, 26, 1903-1914.	2.2	9
41	Visuohaptic experiments: Exploring the effects of visual and haptic feedback on students' learning of friction concepts. <i>Computer Applications in Engineering Education</i> , 2019, 27, 1376-1401.	2.2	9
42	The Role of Simulation-Enabled Design Learning Experiences on Middle School Students' Self-generated Inference Heuristics. <i>Journal of Science Education and Technology</i> , 2019, 28, 382-398.	2.4	9
43	Characterizing Team Orientations and Academic Performance in Cooperative Project-Based Learning Environments. <i>Education Sciences</i> , 2021, 11, 520.	1.4	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 Students' Habits of Mind in a Course on Digital Signal Processing. <i>IEEE Transactions on Education</i> , 2019, 62, 312-324.	2.0	7
47	Exploring Students' Experimentation Strategies in Engineering Design Using an Educational CAD Tool. <i>Journal of Science Education and Technology</i> , 2019, 28, 195-208.	2.4	7
48	Understanding the Interactions between the Scrum Master and the Development Team: A Game-Theoretic Approach. <i>Mathematics</i> , 2020, 8, 1553.	1.1	7
49	Undergraduate Engineering Students' Types and Quality of Knowledge Used in Synthetic Modeling. <i>Cognition and Instruction</i> , 2020, 38, 503-537.	1.9	7
50	Providing students with agency to self-scaffold in a computational science and engineering course. <i>Journal of Computing in Higher Education</i> , 2021, 33, 328-366.	3.9	7
51	Investigating Students' Explanations about Friction Concepts after Interacting with a Visuohaptic Simulation with Two Different Sequenced Approaches. <i>Journal of Science Education and Technology</i> , 2020, 29, 443-458.	2.4	7
52	Classroom orchestration of computer simulations for science and engineering learning: a multiple-case study approach. <i>International Journal of Science Education</i> , 2021, 43, 1140-1171.	1.0	7
53	Using machine learning to predict engineering technology students' success with computer-aided design. <i>Computer Applications in Engineering Education</i> , 2022, 30, 852-862.	2.2	7
54	Emotional and cognitive effects of learning with computer simulations and computer videogames. <i>Journal of Computer Assisted Learning</i> , 2022, 38, 875-891.	3.3	7

#	ARTICLE	IF	CITATIONS
55	The role of frameworks in engineering education research. Journal of Engineering Education, 2022, 111, 9-13.	1.9	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 discipline-based computational modeling activity. Computer Applications in Engineering Education, 2020, 28, 837-852.	2.2	4
59	In-code Comments as a Self-explanation Strategy for Computational Science Education. , 0, , .		4
60	Combining hands-on and virtual experiments for enhancing fluid mechanics teaching: A design-based research study. Computer Applications in Engineering Education, 2022, 30, 1701-1724.	2.2	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	Add-on Preferential Groups (APG): Analyzing student preferences of teaching methods. Computer Applications in Engineering Education, 2018, 26, 1020-1032.	2.2	2
67	Visuo-haptic Simulations to Improve Students'™ 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 Students'™ 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

#	ARTICLE	IF	CITATIONS
73	Computational Thinking as a Practice of Representation: A Proposed Learning and Assessment Framework. <i>Journal of Computational Science Education</i> , 2016, 7, 21-30.	0.3	2
74	Exploring Undergraduate Students' Computational Literacy in the Context of Problem Solving. , 0, , .		2
75	First-year undergraduate students' economic decision outcomes in engineering design. <i>Engineering Economist</i> , 2022, 67, 306-324.	0.3	2
76	Engineering in Early Education: a Multicultural Comparison of Web Resources. , 0, , .		2
77	Pedagogical approaches for eliciting students' design thinking strategies: tell-and-practice vs. contrasting cases. <i>International Journal of Technology and Design Education</i> , 2023, 33, 1087-1119.	1.7	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 Teacher'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 Students' 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 Mohr's Circle. , 0, , .		1
90	Colombian Elementary Students' Performance and Perceptions of Computing Learning Activities with Scratch. , 0, , .		1

#	ARTICLE	IF	CITATIONS
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 <i>Computational Apprenticeship</i> Through Educational and Software Infrastructure: A Case Study in aâ€œMathematical Oncology Research Lab. Primus, 2022, 32, 446-467.	0.3	0
103	Investigating teachers' enactment of engineering design practices in a CAD simulationâ€œenhanced learning environment. Computer Applications in Engineering Education, 0, , .	2.2	0
104	A learnerâ€œcentered approach for designing visuohaptic simulations for conceptual understanding of truss structures. Computer Applications in Engineering Education, 0, , .	2.2	0
105	Tool-Based Curricula and Visual Learning. Electronics, 2014, 17, .	0.2	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.	0.2	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

#	ARTICLE	IF	CITATIONS
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