

# Seppo A Sierla

## List of Publications by Year in descending order

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Version: 2024-02-01

81  
papers

1,214  
citations

516710

16  
h-index

501196

28  
g-index

81  
all docs

81  
docs citations

81  
times ranked

868  
citing authors

#	ARTICLE	IF	CITATIONS
1	Adapting an agile manufacturing concept to the reference architecture model industry 4.0: A survey and case study. <i>Journal of Industrial Information Integration</i> , 2019, 15, 147-160.	6.4	106
2	An overview of machine learning applications for smart buildings. <i>Sustainable Cities and Society</i> , 2022, 76, 103445.	10.4	104
3	Automatic assembly planning based on digital product descriptions. <i>Computers in Industry</i> , 2018, 97, 34-46.	9.9	74
4	Early integration of safety to the mechatronic system design process by the functional failure identification and propagation framework. <i>Mechatronics</i> , 2012, 22, 137-151.	3.3	65
5	Automatic Generation of a Simulation-Based Digital Twin of an Industrial Process Plant. , 2018, , .		54
6	Toward Intelligent Industrial Informatics: A Review of Current Developments and Future Directions of Artificial Intelligence in Industrial Applications. <i>IEEE Industrial Electronics Magazine</i> , 2020, 14, 57-72.	2.6	43
7	Automated Fault Location and Isolation in Distribution Grids With Distributed Control and Unreliable Communication. <i>IEEE Transactions on Industrial Electronics</i> , 2015, 62, 2612-2619.	7.9	35
8	An Artificial Intelligence framework for bidding optimization with uncertainty in multiple frequency reserve markets. <i>Applied Energy</i> , 2020, 280, 115918.	10.1	34
9	Common cause failure analysis of cyber-physical systems situated in constructed environments. <i>Research in Engineering Design - Theory, Applications, and Concurrent Engineering</i> , 2013, 24, 375-394.	2.1	32
10	A taxonomy of machine learning applications for virtual power plants and home/building energy management systems. <i>Automation in Construction</i> , 2022, 136, 104174.	9.8	31
11	A Migration Path to IEC 61499 for the Batch Process Industry. , 2007, , .		27
12	Automatic Generation of a High-Fidelity Dynamic Thermal-Hydraulic Process Simulation Model From a 3D Plant Model. <i>IEEE Access</i> , 2018, 6, 45217-45232.	4.2	26
13	Internet of Energy Approach for Sustainable Use of Electric Vehicles as Energy Storage of Prosumer Buildings. <i>Energies</i> , 2018, 11, 2165.	3.1	26
14	Tutorial: Road Lighting for Efficient and Safe Traffic Environments. <i>LEUKOS - Journal of Illuminating Engineering Society of North America</i> , 2017, 13, 223-241.	2.9	25
15	Roadmap to semi-automatic generation of digital twins for brownfield process plants. <i>Journal of Industrial Information Integration</i> , 2022, 27, 100282.	6.4	22
16	An Integrated Implementation Methodology of a Lifecycle-Wide Tracking Simulation Architecture. <i>IEEE Access</i> , 2018, 6, 15391-15407.	4.2	19
17	Task Allocation Algorithm for Energy Resources Providing Frequency Containment Reserves. <i>IEEE Transactions on Industrial Informatics</i> , 2019, 15, 677-688.	11.3	19
18	Simulation of Interactions and Emergent Failure Behavior During Complex System Design. <i>Journal of Computing and Information Science in Engineering</i> , 2012, 12, .	2.7	18

#	ARTICLE	IF	CITATIONS
19	Generating an Object Oriented IEC 61131-3 software product line architecture from SysML. , 2013, , .		18
20	Energy efficient traffic-based street lighting automation. , 2014, , .		16
21	Towards Semi-Automatic Generation of a Steady State Digital Twin of a Brownfield Process Plant. Applied Sciences (Switzerland), 2020, 10, 6959.	2.5	16
22	A Virtual Power Plant Solution for Aggregating Photovoltaic Systems and Other Distributed Energy Resources for Northern European Primary Frequency Reserves. Energies, 2021, 14, 1242.	3.1	16
23	Exploiting Artificial Neural Networks for the Prediction of Ancillary Energy Market Prices. Energies, 2018, 11, 1906.	3.1	15
24	Towards Product Centric Manufacturing: From Digital Twins to Product Assembly. , 2019, , .		15
25	An IEC 61499 Based Approach for Distributed Batch Process Control. Industrial Informatics, 2009 INDIN 2009 7th IEEE International Conference on, 2007, , .	0.0	14
26	Assessing the industrial applicability and adoption potential of the AUKOTON model driven control application engineering approach. , 2010, , .		14
27	Smart indoor lighting control: Power, illuminance, and colour quality. , 2014, , .		14
28	Applying graph matching techniques to enhance reuse of plant design information. Computers in Industry, 2019, 107, 81-98.	9.9	14
29	Vehicle and pedestrian aware street lighting automation. , 2015, , .		13
30	Integrating 2D and 3D Digital Plant Information Towards Automatic Generation of Digital Twins. , 2020, , .		13
31	Solar Irradiance Nowcasting for Virtual Power Plants Using Multimodal Long Short-Term Memory Networks. Frontiers in Energy Research, 2021, 9, .	2.3	13
32	A Review of Reinforcement Learning Applications to Control of Heating, Ventilation and Air Conditioning Systems. Energies, 2022, 15, 3526.	3.1	13
33	Distributed Problem Solving in Software Development. Social Studies of Science, 2008, 38, 133-158.	2.5	11
34	Change request management in model-driven engineering of industrial automation software. , 2015, , .		11
35	Towards an aggregator that exploits big data to bid on frequency containment reserve market. , 2017, , .		11
36	Professional designers' adaptations of IEC 61499 to their individual work practices. , 2006, , .		10

#	ARTICLE	IF	CITATIONS
37	Object oriented extensions of IEC 61131-3 as an enabling technology of software product lines. , 2011, , .		10
38	Industrial evaluation of functional Model-Based Testing for process control applications using CAEX. , 2013, , .		10
39	Hybrid modeling and co-simulation of district heating systems with distributed energy resources. , 2014, , .		9
40	Capturing Interactions and Emergent Failure Behavior in Complex Engineered Systems at Multiple Scales. , 2011, , .		9
41	Generating and validating product instances in IEC 61131-3 from feature models. , 2011, , .		8
42	Co-simulation of a dynamic process simulator and an event-based control system: Case district heating system. , 2014, , .		8
43	Automatic Generation of Pipelines Into a 3D Industrial Process Model. IEEE Access, 2017, 5, 26591-26603.	4.2	8
44	Exploiting Battery Storages With Reinforcement Learning: A Review for Energy Professionals. IEEE Access, 2022, 10, 54484-54506.	4.2	8
45	Process Control with IEC 61499: Designers' Choices at Different Levels of the Application Hierarchy. , 2006, , .		7
46	An industrial evaluation of SysML: The case of a nuclear automation modernization project. , 2013, , .		7
47	Adapting Keyword driven test automation framework to IEC 61131-3 industrial control applications using PLCopen XML. , 2014, , .		7
48	Safety analysis of mechatronic product lines. Mechatronics, 2014, 24, 231-240.	3.3	7
49	Robust Multi-Step Predictor for Electricity Markets with Real-Time Pricing. Energies, 2021, 14, 4378.	3.1	7
50	A Methodology for Generating a Digital Twin for Process Industry: A Case Study of a Fiber Processing Pilot Plant. IEEE Access, 2022, 10, 58787-58810.	4.2	7
51	Educational approaches for the industrial acceptance of IEC 61499. , 2007, , .		6
52	A Simulation Based Approach to Automate Event Tree Generation for Early Complex System Designs. , 2013, , .		6
53	Service-based Architecture with Product-centric Control in a Production Island-based Agile Factory. , 2019, , .		6
54	Hybrid Digital Twin for process industry using Aprosim simulation environment. , 2021, , .		6

#	ARTICLE	IF	CITATIONS
55	Using Fault Propagation Analyses for Early Elimination of Unreliable Design Alternatives of Complex Cyber-Physical Systems. , 2012, , .		5
56	Security risk analysis for smart grid automation. , 2014, , .		5
57	Capturing Deviations From Design Intent in Building Simulation Models for Risk Assessment. Journal of Computing and Information Science in Engineering, 2015, 15, .	2.7	5
58	A Simulation Environment for Training a Reinforcement Learning Agent Trading a Battery Storage. Energies, 2021, 14, 5587.	3.1	5
59	Real-time middleware for the requirements of distributed process control. , 0, , .		4
60	Challenges in industrial adoption of model-driven technologies in process control application design. , 2011, , .		4
61	Early phase fault propagation analysis of safety critical factory automation systems. , 2012, , .		4
62	Design to automation continuum for industrial processes: ISO 15926 â€“ IEC 61131 versus an industrial case. , 2019, , .		4
63	Generating an industrial process graph from 3D pipe routing information. , 2020, , .		4
64	Reducing redesign of safety critical control systems by early risk assessment. , 2010, , .		3
65	Requirement verification in simulation-based automation testing. , 2016, , .		3
66	A framework for runtime verification of industrial process control systems. , 2017, , .		3
67	Automatic Generation of a Lifecycle Analysis Model from a First Principles Industrial Process Simulation Model. , 2018, , .		3
68	Whitening CNN-Based Rotor System Fault Diagnosis Model Features. Applied Sciences (Switzerland), 2022, 12, 4411.	2.5	3
69	An open standards-based service infrastructure for industrial telematics. , 0, , .		2
70	Simulation-based risk assessment of robot fleets in flooded environments. , 2013, , .		2
71	Fuzzy Logic Based Prosumer Agent in a Modular Smart Grid Prosumer Architecture. , 2015, , .		2
72	An auction-based smart district heating grid. , 2015, , .		2

#	ARTICLE	IF	CITATIONS
73	Validating the Real-Time Performance of Distributed Energy Resources Participating on Primary Frequency Reserves. <i>Energies</i> , 2021, 14, 6914.	3.1	2
74	Bidding a Battery on Electricity Markets and Minimizing Battery Aging Costs: A Reinforcement Learning Approach. <i>Energies</i> , 2022, 15, 4960.	3.1	2
75	Security impact assessment of industrial automation systems using genetic algorithm and simulation. , 2014, , .		1
76	A SysML profile supporting change orders in model driven engineering. , 2015, , .		1
77	Towards a task allocation algorithm for frequency containment reserves. , 2017, , .		1
78	Interfacing Third Party Cloud Services to a Virtual Power Plant. , 2021, , .		1
79	An Infrastructure for Open Service Architectures in MMM Industries. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2004, 37, 275-280.	0.4	0
80	Evaluation of electric grid automation under flood hazards. , 2013, , .		0
81	Towards electric vehicles integration to distributed energy resources of prosumer. , 2017, , .		0