

2024 Winter Simulation Conference (WSC 2024)

**Orlando, Florida, USA
15-18 December 2024**

Pages 1-725



**IEEE Catalog Number: CFP24WSC-POD
ISBN: 979-8-3315-3421-9**

**Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP24WSC-POD
ISBN (Print-On-Demand):	979-8-3315-3421-9
ISBN (Online):	979-8-3315-3420-2
ISSN:	0891-7736

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

A Tutorial on Nested Simulation	1
<i>Guangwu Liu, Kun Zhang</i>	
A Tutorial for Monte Carlo Tree Search in AI.....	16
<i>Michael C. Fu, Daniel Qiu, Jie Xu</i>	
Data-Driven Simulation Optimization in the Age of Digital Twins: Challenges and Developments	31
<i>Enlu Zhou</i>	
Concept of Digital Twins for Autonomous Manufacturing Through Virtual Learning and Commissioning.....	46
<i>Young Jae Jang, Jaeung Lee, Ferdinandz Japhne, Sangpyo Hong, Seol Hwang, Illhoe Hwang</i>	
Simulation and AI for Critical Infrastructure.....	57
<i>Qing-Shan Jia, Chao Duan, Shuo Feng, Yuhang Zhu, Xiao Hu</i>	
Distributed Model Exploration with EMEWS	72
<i>Nicholson Collier, Justin M. Wozniak, Arindam Fadikar, Abby Stevens, Jonathan Ozik</i>	
Complex Systems Modeling and Analysis	87
<i>Claudia Szabo</i>	
Introduction to Optimal Transport.....	101
<i>Ilya O. Ryzhov, Raghu Pasupathy, Harsha Honnappa</i>	
Tutorial: Artificial Neural Networks for Discrete-Event Simulation.....	116
<i>Peter J. Haas</i>	
Advanced Tutorial: Label-Efficient Two-Sample Tests.....	131
<i>Weizhi Li, Visar Berisha, Gautam Dasarathy</i>	
Modeling Urban Transport Choices: Incorporating Sociocultural Aspects	146
<i>Kathleen Salazar-Serna, Lorena Cadavid, Carlos J. Franco</i>	
Exploring the Influences of Automated Shuttles on Mobility Pattern and Traffic System at Different Granularity Levels.....	158
<i>Yun-Pang Flötteröd, Johannes Müller, Daniel Krajzewicz, Jakob Erdmann, Christian Rudloff</i>	
Assessing the Effects of Container Handling Strategies on Enhancing Freight Throughput.....	170
<i>Sarita Rattanakunuprakarn, Mingzhou Jin, Mustafa Can Camur, Xueping Li</i>	
Accelerating Hybrid Agent-Based Models and Fuzzy Cognitive Maps: How to Combine Agents Who Think Alike?	182
<i>Philippe J. Giabbanelli, Jack T. Beerman</i>	
A Systematic Comparison for Consistent Scenario Development Using Microscopic Simulation Software	194
<i>Abhilasha Saroj, Guan hao Xu, Yunli Shao, Chieh Ross Wang</i>	
Causal-Based Rack Layout Optimization in Retail: Incorporating Agent-Based Modeling and Causal Discovery.....	206
<i>Shuang Chang, Shohei Yamane, Koji Maruhashi</i>	

A Framework of Digital Twins for Modeling Human-Subject Word Formation Experiments.....	218
<i>Hao He, Xueying Liu, Chris J. Kuhlman, Xinwei Deng</i>	
Integrating Large Language Models into Agent Models for Multi-Agent Simulations: Preliminary Report.....	230
<i>Hiromitsu Hattori, Arata Kato, Mamoru Yoshizoe</i>	
Simulation-Based Analysis of Hydrogen Refuelling Station to Support Future Hydrogen Trucks and Technological Advances	242
<i>Abderrahim Ait Alla, Eike Broda, Michael Teucke, Lennart M. Steinbacher, Stephan Oelker, Michael Freitag</i>	
Incorporating the COM-B Model for Behavior Change into an Agent-Based Model of Smoking Behaviors: An Object-Oriented Design.....	252
<i>David Tian, Hazel Y. Squires, Charlotte Buckley, Duncan Gillespie, Harry Tattan-Birch, Lion Shahab, Robert West, Alan Brennan, Jamie Brown, Robin C. Purshouse</i>	
Simulation-Based Optimization for Large-Scale Perishable Agri-Food Cold Chain in Rwanda: Agent-Based Modeling Approach	264
<i>Aghdas Badiie, Adam Gripton, Philip Greening, Toby Peters</i>	
Agent-Based Simulation Framework for Multi-Variant Surveillance	276
<i>Sifat Afroj Moon, Jiangzhuo Chen, Baltazar Espinoza, Bryan Lewis, Madhav Marathe, Joseph Outten, Srinivasan Venkatramanan, Anil Vullikanti, Andrew Warren</i>	
LLM Enhanced Machine Learning Estimators for Classification	288
<i>Yuhang Wu, Yingfei Wang, Chu Wang, Zeyu Zheng</i>	
Enhancing Language Model with Both Human and Artificial Intelligence Feedback Data.....	299
<i>Haoting Zhang, Jinghai He, Jingxu Xu, Jingshen Wang, Zeyu Zheng</i>	
Sensitivity Analysis on Interaction Effects of Policy-Augmented Bayesian Networks.....	311
<i>Junkai Zhao, Jun Luo, Wei Xie, Zixuan Bai</i>	
Digital Twin Calibration for Biological System-Of-Systems: Cell Culture Manufacturing Process.....	323
<i>Fuqiang Cheng, Wei Xie, Hua Zheng</i>	
Calibrating Digital Twins Via Bayesian Optimization with a Root Finding Strategy	335
<i>Yongseok Jeon, Sara Shashaani</i>	
Digital Twin Validation with Multi-Epoch, Multi-Variate Output Data	347
<i>Linyun He, Luke Rhodes-Leader, Eunhye Song</i>	
Zero Stability in Hierarchical Co-Simulation.....	359
<i>Irene Hafner, Martin Bicher, Niki Popper</i>	
Using Cosimla Within Policy Iteration for Mdps with Large State Spaces.....	371
<i>Yifu Tang, Peter W. Glynn, Zeyu Zheng</i>	
Fast Stochastic Epidemic Simulations and an Adaptation of the Next Generation Matrix for a Covid-19 Epidemic Model of Social Distancing.....	383
<i>Isabelle Rao, Stephen E. Chick</i>	
Nested Simulation for Value-At-Risk with Precision Tolerance.....	395
<i>Xianyu Kuang, Guangwu Liu, Qianwen Zhu</i>	

Some Asymptotic Regimes for Quantile Estimation	407
<i>Marvin K. Nakayama, Bruno Tuffin</i>	
Nested Heteroscedastic Gaussian Process for Simulation Metamodeling	419
<i>Jin Zhao, Xi Chen</i>	
An Improved Halton Sequence for Implementation in Quasi-Monte Carlo Methods	431
<i>Nathan Kirk, Christiane Lemieux</i>	
Pre-Scrambled Digital Nets for Randomized Quasi-Monte Carlo.....	443
<i>Pierre L'Ecuyer, Youssef Cherkanihassani, Mohamed El Amine Derkaoui</i>	
An Efficient Finite-Difference Approximation.....	455
<i>Guo Liang, Guangwu Liu, Kun Zhang</i>	
Finding Feasible Systems for a Stochastic Constraint with Relaxed Tolerance Levels.....	467
<i>Chuljin Park, Sigrún Andradóttir, Seong-Hee Kim, Yuwei Zhou</i>	
Finite Budget Allocation Improvement in Ranking and Selection	477
<i>Xinbo Shi, Yijie Peng, Bruno Tuffin</i>	
Nonparametric Input-Output Uncertainty Comparisons.....	489
<i>Jaime Gonzalez, Johannes Milz, Eunhye Song</i>	
Importance Sampling in Optimization Under Uncertainty Using Surrogate Models	501
<i>Xiaotie Chen, David L. Woodruff</i>	
Generalizing the Generalized Likelihood Ratio Method Through a Push-Out Leibniz Integration Approach	513
<i>Xingyu Ren, Michael C. Fu</i>	
A Neural Network Application for Non-Gyroscope Based Aircraft Attitude Determination	525
<i>Raul De Celis, Luis Cadarso</i>	
GenAir: Generative AI for Resilient Urban Air Mobility with VTOLs in Disaster Evacuation.....	537
<i>Abdullah Alsaheal, William Hoy, Priscila Haro, Asad Rehman, Nurcin Celik</i>	
Cooperative Collision Avoidance for Autonomous Vessels in a Mixed Traffic Environment	549
<i>Shivali Verma, Avinash Samvedi</i>	
How Hard is it to Estimate Systemic Enterprise Cyber Risk?	560
<i>Ranjan Pal, Rohan Xavier Sequeira, Sander Zeijlmaker</i>	
Is Systemic Cyber Risk Management for Enterprises Sustainable?	572
<i>Ranjan Pa, Konnie Duan, Rohan Xavier Sequeira, Michael Siegel</i>	
A Comparative Study of Price-Driven Production Control Methods Using a Sawmill Simulator	584
<i>Louis Duhem, Maha Benali, Michael Morin, Jonathan Gaudreault</i>	
A Data-Driven Intelligent Supply Chain Disruption Response Recommender System Framework	596
<i>Yang Hu, Pezhman Ghadimi</i>	
River Digital Twin for Water Quality Prediction.....	608
<i>Surabhi Shrivastava, Souvik Barat, Shankar Kausley, Vinay Kulkarni, Beena Rai</i>	
A Comprehensive Framework for Data-Driven Agent-Based Modeling.....	620
<i>Ruhollah Jamali, Sanja Lazarova-Molnar</i>	

Catalyzing Intelligent Logistics System Simulation with Data-Driven Decision Strategies	632
<i>Shiqi Hao, Yang Liu, Yu Wang, Xiaopeng Huang, Muchuan Zhao, Xiaotian Zhuang</i>	
Data-Driven Uncertainty Revenue Modeling for Computation Resource Allocation in Recommendation Systems.....	644
<i>Feixue Liu, Yuqing Miao, Yun Ye, Peisong Wang, Xinglu Liu, Kai Zhang, Wai Kin Chan</i>	
Towards New Simulation Models for DL-Based Video Streaming in Edge Networks	656
<i>Abdolreza Abhari</i>	
Enhancing GPT-3.5's Proficiency in Netlogo Through Few-Shot Prompting and Retrieval-Augmented Generation.....	666
<i>Joseph Martínez, Brian Llinas, Jhon G. Botello, Jose J. Padilla, Erika Frydenlund</i>	
A Review of Trends and Practices in Using Visual Data for Construction-Related Machine Learning Models.....	678
<i>Abbas Mohammadi, Seyedezahra Golazad, Abbas Rashidi</i>	
Perceiving Copulas for Multimodal Time Series Forecasting	690
<i>Cat P. Le, Chris Cannella, Ali Hasan, Yuting Ng, Vahid Tarokh</i>	
Scorigami: Simulating the Distribution and Assessing the Rarity of National Football League Scores	702
<i>Liam Moyer, Jameson Railey, Andrew Daw, Samuel C. Gutekunst</i>	
Advanced Solar Power Forecasting: A Hybrid/Ensemble Approach Utilizing Geographic and Meteorological Data	714
<i>Mahdi Darvishi, Abdolreza Abhari</i>	
Towards the Digital Twinning and Simulation of a Smart Building for Well-Being.....	726
<i>Daniel Jun Chung Hii, Takamasa Hasama</i>	
Analyzing the Impact of Electric Vehicles on Local Energy Systems Using Digital Twins.....	738
<i>Daniel René Bayer, Marco Pruckner</i>	
Evaluating the Impact of Urban Form Evolution on Urban Energy Performance and Renewable Energy Potential Using Agent-Based Modeling.....	750
<i>Osama Mussawar, Elin Markarian, Ahmad Mayyas, Elie Azar</i>	
Dynamic Load Usage Behavior Simulation in Smart Grids: A Data-Driven Approach in Urban Buildings	762
<i>Shuang Dai, Fanlin Meng</i>	
Optimizing Cyber-Resilience in Critical Infrastructure Networks	774
<i>Ranjan Pal, Rohan Xavier Sequeira, Sander Zeijlmaker, Michael Siegel</i>	
Hybrid Simulation and Reinforcement Learning-Based Scheduling for Resilient Infrastructure Networks	786
<i>Pavithra Sripathanallur Murali, Shima Mohebbi</i>	
Informing Building Retrofits Using Surrogates of Physics-Based Simulation Models: A Comparison of Multi-Objective Optimization Algorithms.....	798
<i>Seif Qiblawi, Elin Markarian, Shivram Krishnan, Anagha Divakaran, Albert Thomas, Elie Azar</i>	
Mixed Energy and Production Scheduling in an Eco-Industrial Park	810
<i>Shufang Xie, Tao Zhang, Oliver Rose, Tobias Uhlig, Björn Vollack</i>	

A Lake Cyanobacteria Colony Dynamics Simulation Supported by SPH.....	822
<i>Samuel Ferrero-Losada, José L. Risco-Martín, José A. López-Orozco, Eva Besada-Portas</i>	
Modeling Pathways to the Emission Trading System: Policy Recommendations for the UAE	834
<i>Nishant Bhattarai, Rahul Rajeevkumar Urs, Toufic Mezher, Ahmad Mayyas</i>	
A Process Simulation Model for a Histopathology Laboratory.....	846
<i>Yin-Chi Chan, Anandarup Mukherjee, Nicola Moretti, Momoko Nakaoka, Jorge Merino, Zahrah Rosun, Colin Carr, Duncan McFarlane, Ajith Kumar Parlikad</i>	
Navigating Complexity: Challenges in Developing Simulation Models for Sterile Processing.....	858
<i>Sayed Rezwatul Islam, Kevin Taaffe, Gabriel Segarra, Sudeep Hegde, Lawrence Fredendall, Niles Goodfellow, Kenneth Catchpole</i>	
Physician Staffing in Telemedicine: A Simulation-Based Approach for a Network of CVS Minute Clinics.....	870
<i>Shuwen Lu, Mark E. Lewis, Jamol Pender</i>	
Simulation of Emergency Care Systems: A Taxonomy and Future Directions	882
<i>Sean Shao Wei Lam, Ashish Kumar, Guo Yuan, Michael Dorosan, Marcus Eng Hock Ong, Fahad Javaid Siddiqui</i>	
Cross-Training Policies for Enhanced Resilience in Emergency Departments	894
<i>Moustafa Abdelwanis, Eman Ouda, Andrei Sleptchenko, Adriana F. Gabor, Mecit Can Emre Simsekler, Mohammed Omar</i>	
An Integrated Simulation Platform for Cardiac Arrest Response System	906
<i>Chang-Yan Shih, Kexin Cao, Xinglu Liu, Xizi Qiao, Wai Kin Victor Chan</i>	
Dependence Between Arrival and Service Processes in Healthcare Simulation Modelling.....	918
<i>Laura Boyle, Nigel Bean</i>	
Testing Facility Location with Constrained Queue Time Problem: A Case Study in Florida, USA.....	928
<i>Almir Antonio Monteiro Junior, Rafael Schneider, Vanessa De Almeida Guimarães, Pedro Henrique González</i>	
Patient Assignment and Prioritization for Multi-Stage Care with Reentrance	940
<i>Wei Liu, Mengshi Lu, Pengyi Shi</i>	
Bayesian Optimization for Clinical Pathway Decomposition from Aggregate Data.....	952
<i>William Plumb, Alex Bottle, Giuliano Casale</i>	
Automatic Population-Based Responsibility Modeling Using Process Mining: Application to Chronic Obstructive Pulmonary Disease.....	964
<i>Ana Lucia Tula, Vincent Augusto, Xavier Boucher, Marianne Sarazin</i>	
Modeling the Lifelong Impact of Changes in Physical Activity Behavior on Non-Communicable Disease Events as a Result of the UK Covid-19 Lockdown.....	976
<i>Kate Mintram, Bhargavi Gottimukkala, Anastasia Anagnostou</i>	
Investigating the Impact of Pandemic on the Perioperative Healthcare Workers Availability: An Agent-Based Approach.....	987
<i>Shweta Prasad, Vishnunarayan Girishan Prabhu, William Hand</i>	
An Agent-Based Model to Assess Interventions for Continuous Care of Cardiovascular Diseases After Natural Disasters	999
<i>Faria Farzana, Eduardo Perez</i>	

A Kidney Paired Donation Program Simulation.....	1011
<i>Zhenyu Yue, Michael C. Fu, Hadi El-Amine, Jie Xu, Chun-Hung Chen</i>	
Optimization of Extended Red Blood Cell Matching in Transfusion Dependent Sickle Cell Patients.....	1023
<i>Folarin B. Oyebolu, Marie Chion, Merel L. Wemelsfelder, Sara Trompeter, Nicholas Gleadall, William J. Astle</i>	
Model-Based Q-Learning with Monotone Policies for Personalized Management of Hypertension.....	1035
<i>Wesley J. Marrero, Lan Yi</i>	
Estimating and Projecting the Economic Impact of Antiretroviral Therapy on the US Economy Through an Updated HIV Microsimulation Model	1047
<i>Haluk Damgacioglu, Kalyani Sonawane, Poria Doralı, Ashish A. Deshmukh</i>	
Towards Using Simulation to Evaluate the Circular Economy of Small Medical Devices	1059
<i>Mohd Shoaib, Antuela Tako, Ramzi Fayad, Armando Vargas-Palacios</i>	
Incorporating Face Mask Usage in Agent-Based Models Using Personal Beliefs and Perceptions: An Application of the Health Belief Model.....	1071
<i>Sebastian A. Rodriguez-Cartes, Maria E. Mayorga, Osman Y. Özaltın, Julie L. Swann</i>	
Using Simulation Modeling to Evaluate the Impact of Proactive Tethering Methodologies on Guinea Worm Infections Among Dogs in Chad	1083
<i>Hannah Smalley, Pinar Keskinocak, Julie Swann, Maryann G. Delea, Obiora A. Eneanya, Adam Weiss</i>	
Quantifying the Impact of Vaccinating Under-Immunized Groups in Polio Outbreaks: A Simulation-Based Study	1094
<i>Yuming Sun, Hongyu Xue, Pinar Keskinocak, Lauren N. Steimle</i>	
A Standardized Framework for Modeling Non-Pharmaceutical Interventions in Individual-Based Infectious Disease Simulations.....	1106
<i>Johannes Ponge, Janik Suer, Bernd Hellingrath, André Karch</i>	
Metamodel of a Simulation Model of Colorectal Cancer with Diverse Clinic Populations and Intervention Scenarios	1118
<i>Ashley Stanfield, Maria E. Mayorga, Meghan C. O'Leary, Kristen Hassmiller Lich</i>	
A Hybrid Approach Combining Simulation and a Queueing Model for Optimizing a Biomanufacturing System	1130
<i>Danielle F. Morey, Giulia Pedrielli, Zelda B. Zabinsky</i>	
A Novel Approach for Outcomes Estimation in Hybrid Simulation Models of Disease Transmission and Progression	1139
<i>Soham Das, Aparna Venkataraman, Varun Ramamohan</i>	
A Maturity Model for Digital Twins in Healthcare	1151
<i>Navonil Mustafee, Alison Harper, Joe Viana, Thomas Monks</i>	
Enhancing Forced Displacement Simulations: Integrating Health Facilities for Automatically Generated Routes Networks	1163
<i>Alireza Jahani, Maziar Ghorbani, Diana Suleimenova, Yani Xue, Derek Groen</i>	
Deploying Reusable Healthcare Simulation Models in Python.....	1173
<i>Alison Harper, Thomas Monks, Navonil Mustafee</i>	

Multi-Method Modeling and Simulation of a Vertical Lift Module with an Integrated Buffer System Using Anylogic.....	1185
<i>Noe Tavira, Abhimanyu Sharotry, Jesus A. Jimenez, Jakob Marolt, Tone Lerher</i>	
Planning a Material Replenishment Through Autonomous Mobile Robot in an Assembly Plant Using a Hybrid Simulation Approach.....	1197
<i>Rupesh Bade Shrestha, Ellie Hungerford, Konstantinos Mykoniatis</i>	
Supply Chain Resilience Optimization with Agent-Based Modeling (SCROAM): A Novel Hybrid Framework.....	1209
<i>Anastasia Anagnostou, Kate Mintram, Simon J E Taylor</i>	
Assessing the Impact of Physicians' Behavior Variability on Performance Indicators in Emergency Departments: An Agent-Based Model.....	1221
<i>Miguel Baigorri, Marta Cildoz, Fermin Mallor</i>	
A Hybrid Simulation Approach for Modeling Critical Care Delivery in ICU.....	1233
<i>Xiang Zhong, Siddharth Vipankumar Abrol Neena, Grace Yao Hou, Yue Dong, Amos Lal, Ognjen Gajic</i>	
Ten Years of the Hybrid Simulation Track: Reflections and Vision for the Future	1245
<i>Anastasia Anagnostou, Sally Brailford, Tillal Eldabi, Navonil Mustafee, Antuela Tako</i>	
Testing Methodology for Devs Models in Cadmium	1260
<i>Curtis Winstanley, Gabriel Wainer</i>	
Hybrid Modeling Integrating Artificial Intelligence and Modeling & Simulation Paradigms	1271
<i>Andreas Tolk</i>	
An Introduction to Digital Twins.....	1281
<i>Andrea Matta, Giovanni Lugaresi</i>	
Twenty-Three Critical Pitfalls in Simulation Modeling and How to Avoid Them	1296
<i>Averill M. Law</i>	
Simulation Optimization: An Introductory Tutorial on Methodology	1308
<i>Sara Shashaani</i>	
An Introductory Tutorial for the Kotlin Simulation Library.....	1323
<i>Manuel D. Rossetti</i>	
Introductory Tutorial: Simulation Optimization Under Input Uncertainty	1338
<i>Linyun He, Eunhye Song</i>	
Importance Sampling for Minimization of Tail Risks: A Tutorial	1353
<i>Anand Deo, Karthyek Murthy</i>	
Simulation Exploration Experience (SEE) Introductory Tutorial.....	1368
<i>Maziar Ghorbani, Anastasia Anagnostou, Nura T. Abubakar, Hridayanshu Aatreya, Damon Curry, Simon J. E. Taylor</i>	
Increasing Model Transparency in System Dynamics Models.....	1383
<i>Ignacio J. Martinez-Moyano</i>	
Enhancing Passenger Flow at Subway Transfer Stations Through Simulation Modeling.....	1398
<i>Dongyang Zhen, Zhuoxuan Liu, Yonghao Chen, Qingbin Cui</i>	

Enhancing Driver Behavior Models in Response to Emergency Vehicles	1410
<i>Gopikrishnan Nair Suresh Kumar, Michael Hunter, Angshuman Guin</i>	
Adaptive Transit Signal Priority Based on Deep Reinforcement Learning and Connected Vehicles in a Traffic Micro Simulation Environment	1422
<i>Dickness Kakitahi Kwesiga, Angshuman Guin, Michael Hunter</i>	
Reducing Transient Behavior in Simulation-Based Digital Twins: A Novel Initialization Approach for Order Picking Systems.....	1434
<i>Stefan Galka</i>	
Cloud Based Simulation Platform (CSP): A Novel Way to Democratize Simulation Based Experimentation	1446
<i>Rohan Vaidya, Abhineet Mittal, Ganesh Nanaware</i>	
Metamodel-Based Order Picking for Automated Storage and Retrieval Systems.....	1457
<i>Andrea Ferrari, Canan Gunes Corlu</i>	
Portallite Towns: Investigating the Viability and Impact of Distributed Small Ports Network in Enhancing Accessibility and Sustainability.....	1469
<i>Jay Amer, Xudong Wang, Yanan Li, Haobin Li, Xueping Li</i>	
Scenario Based Verification and Validation of Automated Driving Vessels.....	1481
<i>Arnold Akkermann</i>	
Automatic Model Generation for Discrete Event Simulation of Less-Than-Truckload Terminals	1493
<i>Lasse Jurgeleit, Maximilian Mowe, Maximilian Kiefer, Christin Schumacher, Uwe Clausen</i>	
Insights into Car Sharing Relocation Policies Using a Simulation-Optimization Approach.....	1505
<i>Mahmoud El-Banna, Amani Albdour</i>	
Designing the Charging Stations Network for Freight Delivery by Drones Using Simulation- Optimization.....	1516
<i>Irene Izco, Adrian Serrano-Hernandez, Javier Faulin</i>	
Simulation and Optimization-Based Planning of the Use of Tank Containers in the Production of Specialty Chemicals	1527
<i>Maximilian Kiefer, Patrick Buhle, Uwe Clausen</i>	
Evaluating Production Planning and Control Systems in Different Environments: A Comparative Simulation Study	1539
<i>Wolfgang Seiringer, Balwin Bokor, Klaus Altendorfer</i>	
Combining Simulation and Recurrent Neural Networks for Model-Based Condition Monitoring of Machines	1551
<i>Alexander Wuttke, Markus Rabe, Joachim Hunker, Jan-Philipp Diepenbrock</i>	
Validation and Quantification of Possible Model Extensions for a Railway Operations Model Using Delay Data Disaggregation.....	1563
<i>Nadine Schwab, Matthias Rößler, Hannah Kastinger, Günter Schneckenreither, Matthias Wastian, Niki Popper</i>	
Disaster Relief Inventory Simulation: Managing Resources in Humanitarian Camps.....	1575
<i>Cem Yarkin Yildiz, O. Erhun Kundakcioglu</i>	

Analyzing Delivery Performance and Robustness of Wood Supply Chains Using Simulation-Based Multi-Objective Optimization	1587
<i>Karin Westlund, Amos H. C. Ng</i>	
Simulation Aspects of a Generic Digital Twin Ecosystem for Computer Numerical Control Manufacturing Processes	1599
<i>Minas Pantelidakis, Konstantinos Mykoniatis</i>	
Enhancing Digital Twins with Deep Reinforcement Learning: A Use Case in Maintenance Prioritization	1611
<i>Siyuan Chen, Paulo Victor Lopes, Silvan Marti, Mohan Rajashekarappa, Sunith Bandaru, Christina Windmark, Jon Bokrantz, Anders Skoogh</i>	
The Economic Impact of Digital Twin Technology on Manufacturing Systems	1623
<i>Ali Ahmad Malik</i>	
Predictive Decision Models for an Energy Efficient Operation of Stacker Cranes in a High-Bay Warehouse	1634
<i>Rico Zöllner, Konrad Handrich, Frank Schulze, Thorsten Schmidt</i>	
Manufacturing Intralogistics Concepts for a Battery Assembly Line	1645
<i>Bilgenur Erdogan, Quang-Vinh Dang, Mehrdad Mohammadi, Ivo Adan</i>	
Component-Based Synthesis of Structural Variants of Simulation Models for Changeable Material Flow Systems	1657
<i>Jan Winkels, Felix Özkul, Robin Sutherland, Jannik Löhn, Sigrid Wenzel, Jakob Rehof</i>	
Data-Driven Extraction of Simulation Models for Energy-Oriented Digital Twins of Manufacturing Systems: An Illustrative Case Study	1669
<i>Atieh Khodadadi, Sanja Lazarova-Molnar</i>	
Energy Price and Workload Related Dispatching Rule: Balancing Energy and Production Logistics Costs	1681
<i>Balwin Bokor, Wolfgang Seiringer, Altendorfer Klaus, Felberbauer Thomas</i>	
Discovering Simulation Models from Labor-Intensive Manufacturing Systems	1693
<i>Manuel Götz, Sanja Lazarova-Molnar</i>	
Discrete Events Simulation of a Manufacturing Line for Floating Wind Turbines	1705
<i>Diego Crespo-Pereira, Santiago Bueno-Infantes, Daniel Molero-Medina, Sara Pereira-De La Infanta</i>	
Synthetic Simulated Environment for Discrete Manufacturing Systems: A Demonstrator Through a Computational Modeling Approach	1716
<i>Silvan Marti, Paulo Victor Lopes, Siyuan Chen, Mohan Rajashekarappa, Elham Rekabi Bana, Amon Göppert, Mélanie Déspeisse, Johan Stahre, Björn Johansson</i>	
Assessing Scheduling Strategies for a Shared Resource for Multiple Synchronous Lines	1728
<i>Harshita Parasrampuria, Russell R. Barton</i>	
Cyber-Physical Production System Framework for Production Scheduling in Smart Factories	1740
<i>Ivan Arturo Renteria-Marquez, Jose Carlos Garcia Marquez Basaldua, Oswaldo Aguirre, Bryan Eduardo Lara-Medrano, Tzu-Liang Bill Tseng</i>	
Enhancement of Vendor-Managed Inventory Planning Through Deep Reinforcement Learning	1749
<i>Marco Ratusny, Jee Hyung Kim, Hajime Sekiya, Maximilian Schiffer, Hans Ehm</i>	

Maintenance Planning with Deterioration by a Reinforcement Learning Approach - A Semiconductor Simulation Study	1761
<i>Cas Leenen, Michael Geurtsen, Ivo Adan, Zumbul Atan</i>	
Reinforcement Learning for Unrelated Parallel Machine Scheduling with Release Dates, Setup Times, and Machine Eligibility	1773
<i>Sang-Hyun Cho, Hyun-Jung Kim, Lars Mönch</i>	
Enhancing Machine Learning for Situation Aware Dispatching Through Generative Adversarial Network Based Synthetic Data Generation	1785
<i>Chew Wye Chan, Boon Ping Gan, Wentong Cai</i>	
Scheduling Jobs on a Single Stress Test Machine in a Reliability Laboratory	1797
<i>Jessica Hautz, Andreas Klemmt, Lars Mönch</i>	
Capacity Planning Accuracy and the Effect of Dyanmic Dedication Changes for a Single Wafer Lot Semiconductor Factory.....	1809
<i>Richard Surman, Matt Nehl, Cole Evanson, Soo Leen Low, Kern Chern Chan, Hui Sian Liu, Boon Ping Gan</i>	
Long-Term Rapid Scenario Planning in the Semiconductor Industry Using Deep Reinforcement Learning	1818
<i>Bibi De Jong, Kai Schelthoff, Riccardo Lo Bianco, Willem Van Jaarsveld</i>	
Borderless Fab Scenarios in Hierarchical Planning Settings: A Simulation Study.....	1830
<i>Raphael Herding, Lars Mönch</i>	
Transportation Product Carbon Footprint: A Framework for Semiconductor Supply Chain.....	1841
<i>Youlim Son, Woo-Jin Ko, Philipp Ulrich, Rabia Sarilmis, Hans Ehm</i>	
Order Lead Time Influencing Factors in the Semiconductor Supply Chain.....	1853
<i>Fabian Gassner, Patrick Moder, Marco Ratusny</i>	
Yield Improvement Using Deep Reinforcement Learning for Dispatch Rule Tuning.....	1865
<i>David Norman, Prafulla Dawadi, Harel Yedidsion</i>	
Comparison Study to Evaluate the Relationship Between Equipment Uptime Variability Metrics and Cycle Time.....	1877
<i>Chris Keith, Maryam Anvar, Marino Arturo</i>	
Leveraging Machine Signals for Device-Level Quality Detection and Automatic Root Cause Analysis in Semiconductor Wire Bonding	1886
<i>Kenneth J. Braakman, D. Martin Knotter, Alp Akcay, Ivo Adan</i>	
Analyzing the Trade-Off Between Quality and Sojourn Time When Optimizing Sampling Plans in Semiconductor Manufacturing	1898
<i>Stéphane Dautère-Pères, Michael Hassoun</i>	
Spline Interpolation-Based Multi-Scale Model for Etching in a Chlorine-Argon Inductively Coupled Plasma.....	1907
<i>Lado Filipovic, Tobias Reiter</i>	
Breaking Barriers in Semiconductor Simulations: An Automated Low-Code Framework for Model-Structure Synchronisation and Large-Scale Simulation Studies.....	1919
<i>Madlene Leißau, Christoph Laroque</i>	

Aggregated Simulation Modeling to Assess Product-Specific Safety Stock Targets During Market Up- And Downswings: A Case Study	1931
<i>Cas Rosman, Eric Weijers, Kai Schelthoff, Willem Van Jaarsveld, Alp Akcay, Ivo Adan</i>	
Digital Twin Based Uncertainty Informed Time Constraint Control in Semiconductor Manufacturing	1943
<i>Marvin Carl May, Lars Kiefer, Gisela Lanza</i>	
Enhanced Ontology Extraction: Integrating GPT AI with Human Knowledge on the Example of EU Standards Related to Semiconductor Supply Chains.....	1955
<i>George Dimitrakopoulos, Hans Ehm, Eleni Tsaousi</i>	
A Standard Framework for AI-Driven Optimizations in Various Complex Domains	1966
<i>Tobias Bosse, Evangelos Angelidis, Fei Fei Zhang, Chew Wye Chan, Boon Ping Gan, Matthias Werner, Andrej Gisbrecht</i>	
Offline Reinforcement Learning for Autonomous Cyber Defense Agents	1978
<i>Alexander Wei, David Bierbrauer, Emily Nack, John Pavlik, Nathaniel Bastian</i>	
Curriculum Interleaved Online Behavior Cloning for Complex Reinforcement Learning Applications.....	1990
<i>Michael Möbius, Kai Fischer, Daniel Kallfass, Stefan Göricke, Thomas Doll</i>	
AI-Driven Physics-Based Simulation Design with Optical Flow Based Markov Decision Processes for Smart Surveillance.....	2002
<i>Seunghan Lee, Yinwei Zhang, Aaron Legrand, Seth Gibson-Todd</i>	
Experience Accumulation in Military Workforce Planning.....	2014
<i>Jillian Anne Henderson, Cameron Pike, Slawomir Wesolkowski, René Séguin</i>	
A Mentored Experience Accumulation Differential Model: Rapid Parameter Space Analysis Applied to Royal Canadian Air Force Pilot Production, Absorption and Retention.....	2026
<i>Jack Quirion, Stephen Okazawa, Robert Mark Bryce, Jillian Anne Henderson</i>	
Modeling Operational Demand for Canada's Future Naval Fleet: A Case Study on Maintaining Expected Frequencies of Military Vignettes.....	2038
<i>Lynne Serré, Lise Arseneau</i>	
Simulation of Low Earth Orbit Satellite Communication Data for Cyber Attack Detection.....	2050
<i>Laila Mashayekhi, Michael E. Kuhl</i>	
Design, Modeling and Simulation of Cybercriminal Personality-Based Cyberattack Campaigns	2058
<i>Jeongkeun Shin, Geoffrey B. Dobson, L. Richard Carley, Kathleen M. Carley</i>	
Data Model and Simulation for Persistent Mission Planning with Energy-Sharing Autonomous Ground and Air Vehicles.....	2070
<i>James Humann, Steven Carlos Ortega, James Glenn, Jack L. Folsom, Subramanian Ramasamy, Md. Safwan Mondal, Pranav Bhounsule, Jean-Paul Reddinger, James Dotterweich</i>	
Discrete-Event Simulation of the Disaster Response in the Aftermath of a Coordinated Unmanned Aerial Vehicle Strike in an Urban Area	2082
<i>Mehdi Benhassine, Ruben De Rouck, Michel Debacker, Ives Hubloue, John Quinn, Filip Van Utterbeeck</i>	
Integrating Actual Human Behavior into an Agent-Based School Shooting Simulation.....	2094
<i>Kevin Kapadia, Nutchanon Yongsatianchot, Stacy Marsella, Richard John</i>	

Generative Learning for Simulation of Vehicle Faults	2106
<i>Patrick Kuiper, Sirui Lin, Jose Blanchet, Vahid Tarokh</i>	
Devs-Based Simulation Acceleration for AI Training: Unmanned Surface Vehicle Case	2118
<i>Juho Choi, Jang Won Bae, Il-Chul Moon</i>	
Building Equitable Student Project Groups - A Simulation Study to Assess Heuristic Assignment Methods	2130
<i>Matthew Dabkowski, Stephen Gillespie, Ian Kloo, Devon Compeau, Mai Tran</i>	
Capturing Soldier Fitness Levels in Combat Simulations	2142
<i>Vikram Mittal, Paul Evangelista</i>	
Interactive Multi-Level Virtual Tactical Simulation: The Development of an Autonomy Architecture to Improve Training Experience	2154
<i>Edison P. De Freitas, Eliakim Zacarias, Raul C. Nunes, Luis A. L. Silva</i>	
Potential and Challenges of Assurance Cases for Simulation Validation	2166
<i>Pia Wilsdorf, Steffen Zschaler, Fiete Haack, Adelinde M. Uhrmacher</i>	
Methodology for Online Estimation of Rheological Parameters in Polymer Melts Using Deep Learning and Microfluidics	2178
<i>Juan Sandubete-López, José L. Risco-Martín, Alexander H. McMillan, Eva Besada-Portas</i>	
Continuous Optimization for Offline Change Point Detection and Estimation	2190
<i>Hans Reimann, Sarat Moka, Georgy Sofronov</i>	
Model-Driven Engineering for High-Performance Parallel Discrete Event Simulations on Heterogeneous Architectures	2202
<i>Romolo Marotta, Alessandro Pellegrini</i>	
Efficient Parallel Simulation of Networked Synchronous Discrete-Event Systems	2214
<i>Neha Karanjkar, Madhav Desai, Akhil Kushe, Anish Natekar</i>	
Scalable HPC Job Scheduling and Resource Management in SST	2226
<i>Abubeker Abdurahman, Abrar Hossain, Kevin A. Brown, Kazutomo Yoshii, Kishwar Ahmed</i>	
Advanced Tutorial on Paratemporal Simulation Using Tree Expansion	2238
<i>Bernard Zeigler, Christian Koertje, Cole Zanni, Sangwon Yoon, Gerardo Dutan</i>	
DEVS as a Method to Model and Simulate Combinatorial Double Auctions for E-Procurement	2253
<i>Juan De Antón, Cristina Ruiz-Martin, Félix Villafañez, David Poza</i>	
Generating TCN Models from Parallel Devs Models: Semiconductor Manufacturing Systems	2265
<i>Vamsi Krishna Pendyala, Hessam S. Sarjoughian, Edward J. Yellig</i>	
Handling Asynchronous Inputs in DEVS Based Real-Time Kernels	2277
<i>Sasisekhar Govind, Gabriel Wainer</i>	
Constructing Hierarchical Modular Models in Alternative and Interchangeable Representations	2289
<i>Hessam S. Sarjoughian, Sheetal C. Mohite</i>	
A High Extensible Modeling Method Using Three-Layer Component-Based Architecture	2301
<i>Haozhe Yuan, Yiping Yao, Wenjie Tang, Feng Zhu</i>	
On Guiding Simulation Model Reuse from the Conceptual Modeling Stage	2313
<i>Xiaoting Song, Maurizio Tomasella, Lazuardi Almuzaki, Jamal Ouenniche, Silvia Padrón</i>	

Uncovering Socioeconomic Features in Pavement Conditions Through Data Mining: A Two-Step Clustering Model.....	2325
<i>Tamim Adnan, Abdolmajid Erfani</i>	
Simulating Federated Learning with Data Augmentation for Culvert Condition Prediction in Utah: A Case Study	2337
<i>Pouria Mohammadi, Abbas Rashidi, Sadegh Asgari</i>	
Adaptive Simulation of EV Charging Processes: Employing Bayesian Inference with Markov Chain Monte Carlo for Dynamic Input Updating.....	2348
<i>Yuzheng Xie, Poojitha Naidu Bandreddy, Mohammed Fawzi M Zaylaee, Wenying Ji</i>	
How Do Different Minds Shape Performance in Construction? an Agent-Based Modelling Approach	2381
<i>Lynn Shehab, Farook Hamzeh</i>	
Optimizing the Automation in Construction Site Logistics: Problems and Proposed Model Library for Materials Flow Simulation.....	2393
<i>Alexander Schlosser, Martin Barth, Peter Schuderer, Jörg Franke</i>	
Enhancing Safety and Efficiency in Crane Operations: Addressing Communication Challenges and Blind Lifts	2405
<i>Kamyab Aghajamali, Rafik Lemouchi, Alireza Rahimi, Saeid Metvaei, Ahmed Bouferguene, Zhen Lei</i>	
A Framework of Project Risk Simulation with Event Knowledge Graph	2416
<i>He Wen, Simaan Abourizk, Yasser Mohamed, Rongbing Huang</i>	
A Federated Simulation-Based Framework for Enhanced Construction Project Planning and Control.....	2428
<i>Rana Ead, Stephen Hague, Yasser Mohamed, Simaan Abourizk</i>	
Closing the Service: Contrasting Activity-Based and Time-Based Systematic Closure Policies	2440
<i>Antonio Castellanos, Andrew Daw, Amy Ward, Galit B. Yom-Tov</i>	
Inferring Reliability Model Parameters from Expert Opinion.....	2452
<i>James Nutaro</i>	
Fusing Expert Knowledge and Data for Simulation Model Discovery in Digital Twins: A Case Study from Reliability Modeling.....	2463
<i>Michelle Jungmann, Sanja Lazarova-Molnar</i>	
Understanding Energy Consumption Trends in High Performance Computing Nodes.....	2475
<i>Jonathan Muraña, Juan J. Durillo, Sergio Nesmachnow</i>	
Using Simulation to Address Inequality and Variability in Elections.....	2487
<i>Brock Spence, Alexander Cañedo, Dima Nazzal</i>	
Smart Management of Dairy Farms Based on Simulation	2499
<i>Oswaldo Palma, Lluís M. Plà-Aragónés, Alejandro Mac Cawley, Víctor M. Albornoz</i>	
Advancing Neutron Safety and Dosimetry in Nuclear Facilities: Applications and Current Status of the Development of Nereida.....	2511
<i>Osiris Núñez-Chongo, Mauricio Suárez-Durán, Hernán Asorey, Iván Sidelnik, Rafael Mayo-García, Roberto Méndez, Manuel Carretero</i>	

Analysis of the SVD Scaling on Large Sparse Matrices	2523
<i>Maria De Castro-Sánchez, José A. Moriñigo, Filippo Terragni, Rafael Mayo-García</i>	
Broadening Access to Simulations for End-Users Via Large Language Models: Challenges and Opportunities	2535
<i>Philippe J. Giabbanelli, Jose J. Padilla, Ameeta Agrawal</i>	
A New Approach to Sensitivity Analysis Based on Dirac Delta Family Methods	2547
<i>Zhenyu Cui, Kailin Ding, Yanchu Liu, Lingjiong Zhu</i>	
A Deep Learning Approach for Rare Event Simulation in Diffusion Processes.....	2559
<i>Henrik Hult, Aastha Jain, Sandeep Juneja, Pierre Nyquist, Sushant Vijayan</i>	
GANCQR: Estimating Prediction Intervals for Individual Treatment Effects with GANs	2571
<i>Jiaxing Wang, Hong Wan, Xi Chen</i>	
Deep Reinforcement Learning for Setup and Tardiness Minimization in Parallel Machine Scheduling.....	2583
<i>Sohyun Nam, Jiwon Baek, Young-In Cho, Jong Hun Woo</i>	
Distortion Risk Measure-Based Deep Reinforcement Learning.....	2595
<i>Jinyang Jiang, Bernd Heidergott, Jiaqiao Hu, Yijie Peng</i>	
Optimizing Job Shop Scheduling Problem Through Deep Reinforcement Learning and Discrete Event Simulation	2607
<i>Bulent Soykan, Ghaith Rabadi</i>	
AI-Driven Multi-Objective UAV Route Optimization	2619
<i>Sahil Belsare, Ashwin Devanga, Mohammad Dehghanimohammadabadai</i>	
Optimizing Smart Retail by Experiment Using an Online AI Model Exploration Interface	2631
<i>Wenfei Huang, Matthias Melzer, Jan Dünneweber</i>	
Modeling of Agent Decisions Using Conditional Generative Adversarial Networks.....	2643
<i>Martin Bicher, Dominik Brunmeir, Niki Popper</i>	
Service Level Prediction in Non-Markovian Nonstationary Queues: A Simulation-Based Deep Learning Approach	2655
<i>Spyros Garyfallos, Yunan Liu, Pere Barlet-Ros, Alberto Cabellos-Aparicio</i>	
Learning Payment-Free Resource Allocation Mechanisms.....	2667
<i>Sihan Zeng, Sujay Bhatt, Eleonora Kreacic, Parisa Hassanzadeh, Alec Koppel, Sumitra Ganesh</i>	
Artificial Intelligence and Simulation for Enhanced Pilot Training	2679
<i>Larry Lowe, Luis Rabelo, Marwen Elkamel, Mitchell Hunsucker, Katalina Arias-Marin, Nathalia Davila, Omar Allaz, Mario Marin, Gene Lee</i>	
SIMDIFF: Modeling and Generation of Stochastic Discrete-Event Simulation Inputs Via Denoising Probabilistic Diffusion Process	2691
<i>Fengwei Jia, Hongli Zhu, Fengyuan Jia, Xinyue Ren, Hongming Tan, Siqi Chen, Wai Kin Victor Chan</i>	
Validation Towards Realistic Synthetic Datasets in Production Planning	2703
<i>Jan Michael Spoor, Marvin Matthes, Martin Krockert, Jens Weber</i>	

Fixed-Precision Ranking and Selection as Markov Decision Process.....	2715
<i>Ruihan Zhou, Yijie Peng</i>	
Application of Generative Artificial Intelligence for Epidemic Modeling	2727
<i>Hannah Danielle Ladera Villaplana, Jaeyoung Kwak, Michael H. Lees, Hongying Li, Wentong Cai</i>	
(Gen)AI Versus (Gen)AI in Industrial Control Cybersecurity	2739
<i>Cynthia Zhang, Ranjan Pal, Corwin Nicholson, Michael Siegel</i>	
Large Language Model Assisted Experiment Design with Generative Human-Behavior Agents.....	2751
<i>Haoyu Liu, Yifu Tang, Zizhao Zhang, Zeyu Zheng, Tingyu Zhu</i>	
Surrogate Model for Distribution Networks Influenced by Weather	2763
<i>Juan M. Restrepo, James Nutaro, Chris Sticht, Teja Kuruganti</i>	
Simulation Based Cycle Time Prediction for Robot Welding	2775
<i>Seongho Cho, Donguk Kim, Sangchul Park</i>	
DEVS Copilot: Towards Generative AI-Assisted Formal Simulation Modelling Based on Large Language Models	2785
<i>Tobias Carreira-Munich, Valentin Paz-Marcolla, Rodrigo Castro</i>	
Systematic Performance Optimization for the Powerdevs Simulator and Models of Large-Scale Real-World Applications	2797
<i>Ezequiel Pecker-Marcosig, Gerónimo Romczyk, Matías Bonaventura, Rodrigo Castro</i>	
A Modeling Framework for Complex Systems	2809
<i>María Julia Blas, Silvio Gonnet</i>	
Port Management Digital Twin and Control Tower Integration: An Approach to Support Real-Time Decision Making	2821
<i>Alice Fernandes, Daniel Gutierrez, Marcelo Fugihara, Bruno De Norman</i>	
Modeling and Simulation of Battery Recharging for UAVs Applications: Smart Farming, Disaster Recovery, and Dengue Focus Detections	2832
<i>Leonardo Grando, Juan F. Galindo Jaramillo, Jose Roberto Emiliano Leite, Edson Luiz Ursini</i>	
Data Assimilation for Online Calibration of Simulation Digital Twin - A Case Study with Multiple Model Parameters.....	2844
<i>Xiaolin Hu, Mingxi Yan</i>	
Simulation-Based Digital Twins: An Accreditation Method	2856
<i>Carlos Henrique Dos Santos, José Arnaldo Barra Montevechi, Afonso Teberga Campos, Rafael De Carvalho Miranda, José Antonio De Queiroz, João Victor Soares Do Amaral</i>	
Localizing Faults in Digital Twin Models by Using Time Series Classification Techniques	2868
<i>Joost Mertens, Joachim Denil</i>	
Tools, Capabilities and Experience of Digital Twins at the Mitre Corporation.....	2880
<i>Edward Y. Hua, Jon Cline, Robert Wittman, Bianica Pires</i>	
Simulation for an Energy-Efficient Semiconductor Manufacturing Network	2891
<i>Hans Ehm, Abdelgafar Ismail, Rahul Gurudatt Nayak, Saskia Serr, Tristan Scheuermann</i>	

Modular Validation Within Digital Twins: A Case Study in Reliability Analysis of Manufacturing Systems.....	2903
<i>Ashkan Zare, Sanja Lazarova-Molnar</i>	
Building a Digital Twin of a CNC Machine Tool.....	2915
<i>Deogratias Kibira, Guodong Shao, Rishabh Venketesh, Matthew J. Triebe</i>	
Modeling Operational Control in Discrete-Event Logistics Systems and Their Digital Twins	2927
<i>Lorenzo Ragazzini, Leon F McGinnis, Elisa Negri, Marco Macchi</i>	
Towards Standardizing the Integration of Digital Twins in Manufacturing Systems	2939
<i>Hedir Oukassi, Amel Jaoua, Soumaya Yacout, Elisa Negri, Mehdi Jaoua</i>	
Supply Chain Digital Twin Framework for Hybrid Manufacturing Strategy Selection: A Case Study from the Semiconductor Industry	2951
<i>Amir Ghasemi, Sanja Lazarova-Molnar, Cathal Heavey</i>	
A Digital Twin-Based Simulator for Small Modular and Microreactors	2963
<i>Zavier Ndum Ndum, Jian Tao, Yang Liu, John Ford, Viktor Vlassov, Noah Morton, Johnathan Grissom, Pavel Tsvetkov, Simon Adu</i>	
The Role of Financial Digital Twin in the Supply Chain Management.....	2975
<i>Anjali Vaghani, Zhaoqing Gong, Michael Henke</i>	
Integrating Dynamic Digital Twins: Enabling Real-Time Connectivity for IoT and Virtual Reality	2987
<i>Lejla Erdal, Ammar Gubartalla, Paulo Victor Lopes, Huizhong Cao, Guodong Shao, Per Lonnehed, Henri Putto, Abbe Ahmed, Sven Ekered, Björn Johansson</i>	
Imparting Adaptiveness and Resilience to Parcel Delivery Networks: A Digital Twin Centric Simulation Based Approach	2999
<i>Souvik Barat, Abhishek Yadav, Himabindu Thogaru, Vinay Kulkarni, Kaustav Bhattacharya</i>	
Real-Time Tracking of Production in Assembly Operations Using Agent-Based Modeling and Digital Twin Techniques.....	3011
<i>Michail Katsigiannis, Konstantinos Mykoniatis</i>	
Industrial Metaverse in Supply Chain Management: Applications, Concepts, and Open Research Paths	3022
<i>Hendrik Van Der Valk, Julia Kunert, Niklas Harke, Katharina Langenbach</i>	
Potentials and Barriers of the Metaverse for Circular Economy	3034
<i>Julia Kunert, Hendrik Van Der Valk, Hannah Scheerer, Christoph Hoppe</i>	
A Framework for Digital Twin Collaboration	3046
<i>Zhengchang Hua, Karim Djemame, Nikos Tziritas, Georgios Theodoropoulos</i>	
Extending Simulation Modeling Methodology for Digital Twin Applications.....	3058
<i>Bhakti Stephan Onggo, Christine S. M. Currie</i>	
Learning Simulation-Based Digital Twins for Discrete Material Flow Systems: A Review	3070
<i>Christian Schwede, Daniel Fischer</i>	
Process Mining as Catalyst of Digital Twins for Production Systems: Challenges and Research Opportunities	3082
<i>Giovanni Lugaresi</i>	

The Impact of Immersion Level When Learning Optimization Concepts Via a Simulation Game.....	3094
<i>Saurav Bandi, Sabahattin G. Ozden, Omar Ashour, Ashkan Negahban</i>	
Understanding Optimal Interactions Between Students and a Chatbot During a Programming Task.....	3106
<i>Jinnie Shin, Laura Cruz-Castro, Zhenlin Yang, Gabriel Castelblanco, Ashish Aggarwal, Walter L. Leite, Bruce F. Carroll</i>	
A Flexible Educational Simulation Model to Study Autonomous Last-Mile Logistics.....	3118
<i>Berry Gerrits, Martijn Mes</i>	
Input Distribution Modeling Using the Kotlin Simulation Library	3130
<i>Manuel D. Rossetti, Farid Hashemain, Maryam Aghamohammadghasem, Danh Phan, Nasim Sadat Mousavi</i>	
Investigating the Use of Generative Ai in M&S Education.....	3142
<i>James F. Leathrum, Yuzhong Shen, Masha Sosonkina</i>	
Incorporating Video Modules in Simulation Education	3154
<i>Jeffrey S. Smith, Madison Evans</i>	
Picking System Digital Twin: A Lab-Based Case Study	3163
<i>Vicky Sipasseuth, Michael E. Kuhl</i>	
Novel Methods for Teaching Simulation: Strengthening Digital Twin Development	3169
<i>Amel Jaoua, Elisa Negri, Mehdi Jaoua, Nabil Benkirane</i>	
A Smoothed Augmented Lagrangian Framework for Convex Optimization with Nonsmooth Stochastic Constraints	3181
<i>Peixuan Zhang, Uday V. Shanbhag</i>	
Improving Dimension Dependence in Complexity Guarantees for Zeroth-Order Methods Via Exponentially-Shifted Gaussian Smoothing.....	3193
<i>Mingrui Wang, Prakash Chakraborty, Uday V. Shanbhag</i>	
Central Finite-Difference Based Gradient Estimation Methods for Stochastic Optimization	3205
<i>Raghu Bollapragada, Cem Karamanli, Stefan M. Wild</i>	
Group Combss: Group Selection Via Continuous Optimization	3217
<i>Anant Mathur, Sarat Moka, Benoit Liquet, Zdravko Botev</i>	
Robust Screening and Partitioning for Feature Selection: A Binary Simulation Optimization Problem	3229
<i>Ethan Houser, Sara Shashaani</i>	
Multi-Attribute Optimization Under Preference Uncertainty.....	3241
<i>Bhavik A. Shah, Raul Astudillo, Peter I. Frazier</i>	
Optimal Stopping for Clinical Trials with Economic Costs: A Simulation-Based Approach.....	3253
<i>Amandeep Chanda, Michael Fu, Eric Slud</i>	
Reliable Online Decision Making with Covariates	3265
<i>Heng Luo, Zhiyang Liang, L. Jeff Hong</i>	
Dynamic Assortment Optimization in Live-Streaming Sales.....	3277
<i>Zishi Zhang, Haidong Li, Ying Liu, Yijie Peng</i>	

An SDDP Algorithm for Multistage Stochastic Programs with Decision-Dependent Uncertainty	3288
<i>Nazlican Arslan, Oscar Dowson, David P. Morton</i>	
Data-Driven Solutions and Uncertainty Quantification for Multistage Stochastic Optimization.....	3300
<i>Yunhao Yan, Henry Lam</i>	
A Simulation-Infused Optimization Approach for Decomposing Nonlinear Systems	3312
<i>Zeyu Liu</i>	
Rate-Optimal Budget Allocation for the Probability of Good Selection	3324
<i>Taeho Kim, David J. Eckman</i>	
Thompson Sampling Procedures for Ranking and Selection with Pairwise Comparisons and Binary Outcomes.....	3336
<i>Dongyang Li, Enver Yücesan, Chun-Hung Chen</i>	
Best-Arm Identification with High-Dimensional Features.....	3346
<i>Dohyun Ahn, Dongwook Shin, Lewen Zheng</i>	
Flood Scenario Generation Using the Norta Model	3358
<i>Ashutosh Shukla, John Hasenbein, Erhan Kutanoglu</i>	
Comparative Analysis of Distance Metrics for Distributionally Robust Optimization in Queuing Systems: Wasserstein Vs. Kingman.....	3368
<i>Hyung-Khee Eun, Sara Shashaani, Russell R. Barton</i>	
Solving Mixed Integer Linear Programs by Monte Carlo Tree Search	3380
<i>Gongbo Zhang, Yijie Peng</i>	
Selection of the Best System with an Optimized Continuous Variable	3392
<i>Yuhao Wang, Seong-Hee Kim, Enlu Zhou</i>	
Selecting the Safest Design in Rare Event Settings.....	3403
<i>Anirban Bhattacharjee, Sandeep Juneja</i>	
Finding Feasible Systems in the Presence of a Probability Constraint.....	3415
<i>Taehoon Kim, Sigrún Andradóttir, Seong-Hee Kim, Yuwei Zhou</i>	
Intelligent Layout Reconfiguration for Reconfigurable Assembly System: A Genetic Algorithm Approach	3423
<i>Jisoo Park, Seog-Chan Oh, Whan Lee, Changha Lee, Hua-Tzu Fan, Jorge Arinez, Sang Do Noh</i>	
Matrix Assembly System Scheduling Optimization in Automotive Manufacturing: A Deep Q-Network Approach	3434
<i>Whan Lee, Seog-Chan Oh, Jisoo Park, Changha Lee, Hua-Tzu Fan, Jorge Arinez, Sejin An, Sang Do Noh</i>	
Simheuristics for Strategic Workforce Planning at a Busy Airport	3446
<i>Johanna Wiesflecker, Maurizio Tomasella, Thomas W. Archibald</i>	
A Preliminary Study on Accelerating Simulation Optimization with GPU Implementation.....	3458
<i>Jinghai He, Haoyu Liu, Yuhang Wu, Zeyu Zheng, Tingyu Zhu</i>	
Repeatedly Solving Similar Simulation-Optimization Problems: Insights from Data Farming	3470
<i>Nicole Felice, Sara Shashaani, David J. Eckman, Susan M. Sanchez</i>	

Evaluating Solvers for Linearly Constrained Simulation Optimization	3482
<i>Natthawut Boonsiriphatthanajaroen, Rongyi He, Litong Liu, Tinghan Ye, Shane G. Henderson</i>	
Simulation Optimization with Non-Stationary Streaming Input Data.....	3494
<i>Songhao Wang, Haowei Wang, Jianglin Xia, Xiuqin Xu</i>	
Black-Box Simulation-Optimization with Quantile Constraints: An Inventory Case Study	3506
<i>Ebru Angün, Jack Kleijnen</i>	
Multi Agent Rollout for Bayesian Optimization.....	3518
<i>Shyam Sundar Nambiraja, Giulia Pedrielli</i>	
BI-Objective Bayesian Optimization with Transformed Additive Gaussian Processes.....	3530
<i>Caroline M. Kerfonta, Qiong Zhang, Margaret M. Wiecek</i>	
Energetic Variational Gaussian Process Regression	3542
<i>Lulu Kang, Yuanxing Cheng, Yiwei Wang, Chun Liu</i>	
Plausible Inference with a Plausible Lipschitz Constant	3554
<i>Gregory Keslin, Daniel W. Apley, Barry L. Nelson</i>	
Linear Noise Approximation Assisted Bayesian Inference on Mechanistic Model of Partially Observed Stochastic Reaction Network	3566
<i>Wandi Xu, Wei Xie</i>	
Adjoint Sensitivity Analysis on Multi-Scale Bioprocess Stochastic Reaction Network	3578
<i>Keilung Choy, Wei Xie</i>	
Importance Sampling of Rare Events for Distribution Networks with Stochastic Loads.....	3590
<i>Mark Christianen, Henry Lam, Maria Vlasiou, Bert Zwart</i>	
Estimating Value of Information Arm Allocation Indices in Contextual Ranking and Selection Problems.....	3602
<i>Andres Alban, Stephen E. Chick, Spyros I. Zoumpoulis</i>	
Input Parameter Uncertainty Quantification with Robust Simulation and Ranking and Selection	3614
<i>Lewei Shi, Zhaolin Hu, Ying Zhong</i>	

Author Index