

Proposal for Special Session at IEEE CASE 2022

Goal/topic:

Simulation is an important area in Automation and many disciplines, and it has many advantages in analyzing the performance of complex stochastic models. Over the last 15 years, AI has been gaining steam and fundamentally reshaped a number of current and emerging areas. Simulation plays a central role in deep learning and reinforcement learning, which are the foundation of AI, and it can continue improving the AI techniques, particularly in addressing some of its bottlenecks. AI techniques have also contributed to recent advances of simulation research.

We propose to organize a special session on Simulation and AI in the upcoming CASE2022. This session is devoted to discussing new opportunities and challenges for the two areas. This track invites papers and presentations about state-of-the-art research at the intersection of simulation and AI. Potential topics include, but are not limited to

- Simulation and AI methodologies
- Simulation-based machine learning
- AI-boosted simulation modeling and optimization
- Simulation and AI in parallel computing environment
- Applications of simulation and AI

Session Title: Simulation and AI

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Contributions:

1. Efficiency analysis of an innovative AS/RS-based container storage system, Ioanna O Alexandri, Mengxue Yuan, Chenhao Zhou, School of Management, Northwestern Polytechnical University, corresponding author: zhouchenhao@nwpu.edu.cn
2. Appointment Scheduling of Multiple Operating Rooms via Sampling based Optimization, Jinxiang Wei, weijinxiang2012@tongji.edu.cn; Zhaolin Hu, russell@tongji.edu.cn, Tongji University
3. Two-stage Distributionally Robust Optimization Model for the Integrated Berth Allocation and Quay Crane Assignment Problem, Chong Wang, Lixin Miao, Canrong Zhang*, Logistics Engineering and Simulation Laboratory, Shenzhen International Graduate School, Tsinghua University, Shenzhen 518055, China, c-wang19@mails.tsinghua.edu.cn
4. Deep Reinforcement Learning-based Dynamic Bandwidth Allocation in Weighted Faired Queues, Jinyan Pan, Gang Chen, Haoran Wu, Li Xia, Sun Yat-sen University, Guangzhou 510006, P.R.China
5. An efficient simulation budget allocation for pairwise comparison, Hui Xiao, Yao Zhang, Gang Kou, Southwestern University of Finance and Economics, msxh@swufe.edu.cn, kougang@swufe.edu.cn
6. The surprising rate optimality of greedy algorithm for large-scale ranking and selection, Zaile Li (Fudan University), Weiwei Fan (Tongji University), Jeff Hong(Fudan University), wfan@tongji.edu.cn
7. Monitoring portfolio risk measure via likelihood ratio regression, School of Management, Harbin Institute of Technology, Jiangnan Shi, Guangxin Jiang, 20s010063@stu.hit.edu.cn
8. W. Li, Y. Han, Z. Shen, G. Xiong. Solve aircraft carrier formation game problems based on Multi-Agent Reinforcement Learning, Institute of Automation, Chinese Academy of Sciences, zhen.shen@ia.ac.cn

Proposals should neither be only with authors from one single country nor include more than 2 papers from the same institution.

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