

2024 IEEE Workshop on Design Automation for CPS and IoT (DESTION 2024)

**Hong Kong
13 – 14 May 2024**



**IEEE Catalog Number: CFP24Y16-POD
ISBN: 979-8-3503-7595-4**

**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:	CFP24Y16-POD
ISBN (Print-On-Demand):	979-8-3503-7595-4
ISBN (Online):	979-8-3503-7594-7

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

2024 IEEE Workshop on Design Automation for CPS and IoT (DESTION) **DESTION 2024**

Table of Contents

Message from DESTION 2024 Chairs	vii
DESTION 2024 Organizing and Program Committees	viii

2024 IEEE Workshop on Design Automation for CPS and IoT (DESTION)

Scalable HLA Co-Simulations of Connected and Automated Vehicles using Aggregation of Virtual Federates	1
<i>Himanshu Neema (Vanderbilt University), Harmon Nine (Vanderbilt University), Thomas Roth (National Institute of Standards and Technology), and Wenqi Guo (National Institute of Standards and Technology)</i>	
A Signal Injection Attack Against Zero Involvement Pairing and Authentication for the Internet of Things	9
<i>Isaac Ahlgren (Loyola University Chicago), Jack West (University of Wisconsin-Madison), Kyuin Lee (University of Houston), George Thiruvathukal (Loyola University Chicago), and Neil Klingensmith (Loyola University Chicago)</i>	
Anvil: An Integration of Artificial Intelligence and Sampling Techniques with Combined CAD-CFD Tool	16
<i>Harsh Vardhan (Vanderbilt University), Umesh Timalina (Vanderbilt University), Michael Sandborn (Vanderbilt University), David Hyde (Vanderbilt University), Peter Volgyesi (Vanderbilt University), and Janos Sztipanovits (Vanderbilt University)</i>	
Fusion of ML with numerical simulation for optimized propeller design	22
<i>Harsh Vardhan (Vanderbilt University), Neha Kumari (University of Georgia), Peter Volgyesi (Vanderbilt University), and Janos Sztipanovits (Vanderbilt University)</i>	
Realistic and Lightweight Cyber Agent Training Environment using Network Emulation in Mininet	28
<i>Chih-Ting Yeh (Vanderbilt University, USA), Himanshu Neema (Vanderbilt University, USA), and Daniel Balasubramanian (Vanderbilt University, USA)</i>	

A Position Paper on Transforming Embedded Real-Time Systems to the Cloud: Challenges and New Research Directions	30
<i>Mitra Nasri (Eindhoven University of Technology) and Jeroen Voeten (Eindhoven University of Technology)</i>	
RAMPART: Reinforcement Against Malicious Penetration by Adversaries in Realistic Topologies	33
<i>Himanshu Neema (Vanderbilt University), Daniel Balasubramanian (Vanderbilt University), Harsh Vardhan (Vanderbilt University), Harmon Nine (Vanderbilt University), and Sandeep Neema (Vanderbilt University)</i>	
Libpanda Apps: Managing the Deployment and Reuse of a Cyber-Physical System	40
<i>Matt Bunting (Vanderbilt University), Matt Nice (Vanderbilt University), Alexander Richardson (Vanderbilt University), Jonathan Sprinkle (Vanderbilt University), and Dan Work (Vanderbilt University)</i>	
Towards Fairness-aware Crowd Management System and Surge Prevention in Smart Cities	46
<i>Yixin Zhang (Carnegie Mellon University), Tianyu Zhao (University of California, Irvine), and Salma Elmalaki (University of California, Irvine)</i>	
Model-based Design Tool for Cyber-physical Power Systems using SystemC-AMS	55
<i>Rahul Bhadani (The University of Alabama in Huntsville), Satyaki Banik (North Carolina State University), Hao Tu (North Carolina State University), Srdjan Lukic (North Carolina State University), and Gabor Karsai (Vanderbilt University)</i>	
Author Index	63