

SoSE 2022 17th International Conference on System of Systems Engineering
Rochester, New York

TIME	(Tuesday 6/7)	Day 1 (Wednesday 6/8)	Day 2 (Thursday 6/9)		Day 3 (Friday 6/10)	
08:00 - 09:00	Arrival Day	Registration			Niagara Fall Trip	
08:30 - 09:00		Welcome				
09:00 - 10:00		Keynote 1: Mo Jamshidi - How Did I Get Involved with System of Systems Engineering: A History? Xerox Auditorium	Keynote 3: Darryl Nelson - Inviting Chaos: Countering and Exploiting Emergence at the Intersection of Systems of Systems and AI Xerox Auditorium			
10:00 - 10:15		Break: The Atrium				
10:15 - 11:45		INCOSE Panel: Systems of Systems Perspective on INCOSE Systems Engineering Vision 2035, Judith Dahman, Garry Roedler, Kerry Lunney, Alan Harding. Xerox Auditorium	Rochester Institute of Technology Tour and Demos	Session 3 A,B,C (Online) Virtual Room 1,2,3		
11:45 - 13:00		Lunch				
13:00 - 14:15		Keynote 2: Saeid Nahavandi - Robots in Control - from Tele-operation to Autonomous Convoying Xerox Auditorium	Session 4 A Classroom 1			
14:15 - 14:30		Break: The Atrium				
14:30 - 15:30		Session 1 A&B Classroom 1 / Classroom 2	Session 5 A,B,C (Online) Virtual Room 1, 2, 3			
15:30 - 15:45		Break: The Atrium				
15:45 - 16:45	Session 2 A&B Classroom 1 / Classroom 2	Session 6 A,B,C (Online) Virtual Room 1, 2, 3	Tutorial (Online) E-CARGO and Systems of Systems.			
17:00 - 18:00	Registration					
18:00 - 19:30	Reception Xerox Auditorium	Banquet (19:00-21:00) Cyber Security Hall Room: 1710				

Day 1 (6/8)		
08:00-09:00	Registration The Atrium	
08:30-09:00	Welcome Xerox Auditorium	
09:00-10:00	Keynote 1: How Did I Get Involved with System of Systems Engineering: A History?, Mo Jamshidi Saeid Nahavandi Xerox Auditorium	Chair:
10:00-10:15	Break: The Atrium	
10:15 - 11:45	INCOSE Panel: Systems of Systems Perspective on INCOSE Systems Engineering Vision 2035, Judith Dahman, Garry Roedler, Kerry Lunney, Alan Harding Xerox Auditorium	Chair: Garry Roedler
11:45 - 13:00	Lunch	
13:00 - 14:00	Keynote 2: Robots in Control – from Tele-operation to Autonomous Convoying, Saeid Nahavandi Jamshidi Auditorium	Chair: Mo Xerox
14:00-14:15	Break: The Atrium	
14:15 - 15:30	Session Chair: Ali K. Raz Classroom 1	Session Chair: Urjaswala Vora/Paul Hershey Classroom 2
	Session 1A: AI & ML in SoSE/Simulatio, Modeling and Analysis Methods	Session 1B: SoSE Simulation, Modeling and Analysis Methods
	#1570801747 A Taxonomy for System of Autonomous Systems (Mohammadreza Torkjazi)	#1570801685 Measuring the Technical Debt (Urjaswala Vora)
	#1570802898 Non-Contact Human Workload Assessment for Adaptive Intelligent Systems (Deep Masanam)	#1570801494 Pattern based engineering of System of Systems - a systematic literature review (Harald Anacker)
	#1570803140 Diagnostic Human Fatigue Classification using Wearable Sensors for Intelligent Systems (Likhitha Nagahanumaiah)	#1570802000 Towards a System of Systems Engineering Architecture Framework (Constantin Mandel)
	#1570802669 Deep Learning based Prediction of Solar Surface Irradiance with Geostationary Satellite Images (Hyojung Ahn)	#1570795914 System of Systems Approach to Derive a Common Framework (ComFrame) for Optical Sensors and Communications Models (Paul Hershey)
	#1570804914 A New Neural ODE Structure for Learning High-Order Dynamical Systems (Shiqi Nan)	#1570800945 Coevolutionary Network Model for Efficient Collaboration in Systems-of-Systems (Myron Boyd)
15:30 - 15:45	Break: The Atrium	
15:45 - 17:15	Session Chair: TBD/Guiping Hu Classroom 1	Session Chair: Moritz Wäschle Classroom 2
	Session 2A: AI & ML Application in SoSE	Session 2B: Agriculture 5.0/Automotive SoSs/Energy, Smart Grid Technologies
	#1570800993 Verification of Intelligent Transportation Systems: Challenges And Possibilities (Ibukun Phillips)	#1570800965 Integrating Crop Simulation and Machine Learning Models to Improve Crop Yield Prediction (Saiara Samira Sajid)
	#1570801212 A random forest algorithm to understand the regulating factors for tea leave decomposition in agroecosystems (Parvin Mohammadiarvekeh)	#1570802199 Application of the Two-layer Wrapper-Embedded Feature Selection Method to Improve Genomic Selection (Fatemeh Amini)
	#1570802399 A Human-Aware Decision Making System for Human-Robot Teams (Saurav Singh)	#1570802462 Considering Functional Safety - supporting the development of automated driving vehicles by the use of Model-Based Systems Engineering (Moritz Wäschle)
	#1570802620 Integrating Machine Learning in Digital Twins by utilizing SysML System Models (Fabian Wilking)	#1570802249 Space Junk Aggregation, Neutralization, In-situ Transformation and Orbital Recycling (Tien-Yueh Fung)
	#1570803395 A system of systems approach to smart Building Management: an AI vision for Facility Management (Aurilla Aurelie Arntzen Bechina)	#1570802732 A Cyber Attack Taxonomy for Microgrid Systems (Hayretin Bahsi)
	#1570808385 Distributed AI-Driven Search Engine on Visual Internet-of-Things for Event Discovery in the Cloud (Arun Das)	#1570804848 Evaluation of Human Perceived Safety during HRC Task using Multiple Data Collection Methods (Melis Sahin)

Day 2 (6/9)

08:00-09:00	Registration	
09:00-10:00	Keynote 3: Inviting Chaos: Countering and Exploiting Emergence at the Intersection of Systems of Systems and AI, Darryl Nelson Chair: Paul Hersey <u>Xerox Auditorium</u>	
10:00 - 10:15	Break: Atrium	
10:15 - 11:45	Rochester Insitute of Technology Tour and Demos	Session 3 A,B,C (Online) Virtual Room 1,2,3
11:45 - 13:00	Lunch	
13:00 - 14:15	Session Chair: S M Towhidul Islam Classroom 1	
	Session 4A: Human Centered Design/Robotic Systems, UAVs, ROVs, Drones	
	#1570800274 Towards Decentralized Importance-based Multi-UAS Path Planning for Wildfire Monitoring (S M Towhidul Islam)	
	#1570803145 System Integration of a Tour Guide Robot (Suhasa Prabhu Kandikere)	
	#1570802041 Inservice Teachers Explore RACECAR MN in Physical and Augmented Environments (Igor Verner)	
	#1570802556 A system-of-systems (SoS) perspective on additive manufacturing decisions for space applications (Qian Shi)	
	#1570802954 Combining Perception Considerations with Artificial Intelligence in Maritime Threat Detection Systems (Jack Qiao)	
14:15 - 14:30	Break: Atrium	
14:30 - 15:30	Session 5 A,B,C (Online) Virtual Room 1,2,3	
15:30 - 15:45	Break: Atrium	
15:45 - 16:45	Session 6 A,B (Online) Virtual Room 1,2	ONLINE TUTORIAL: E-CARGO and Systems of Systems. (Haibin Zhu, Nipissing University, Canada)
19:00-21:00	Banquet (19:00-21:00) Cyber Security Hall Room: 1710	

Day 2- ONLINE SESSIONS (6/9)			
10:15 - 11:15	Session Chair: Samantha Papavasiliou/Alex Gorod (Zoom Admin: Joseph Armstrong) Virtual Room 1 (Online)	Session Chair: TBD, (Zoom admin: Saurav Singh) Virtual Room 2 (Online)	Session Chair: TBD, (Zoom admin: James May) Virtual Room 3 (Online)
	Session 3A:	Session 3B:	Session 3C:
	#1570804931 Stakeholder Management in Digital Transformation: A System of Systems Approach (Samantha Papavasiliou)	#1570799562 Modeling and Resilience Analysis of Combat Systems-of-Systems Based on Kill Web (Jiuyao Jiang)	#1570800931 A Large Scale Content Ranking Platform as Applied to E-commerce Store Fronts (Ayush Bhatnagar)
	#1570802763 Simulation-based Recommendation Generation for Heterogeneous Systems Participating in a Collaborative Work (Zelalem Mihret Belay)	#1570796785 Anomaly-Aware Adaptation Approach for Self-Adaptive Cyber-Physical System of Systems Using Reinforcement Learning (Eunho Cho)	#1570800166 Robot path planning based on electrostatic field (Zi Zhou)
	#1570802709 Cyberattack Vulnerability Identification in System-of-Systems using Model-based Testing (May Myat Thwe)	#1570801791 Hands-On Field Operational Test Dataset of a Multi-Controller CPS: A Modeled Case Study on Autonomous Driving (Yong-Jun Shin)	#1570801137 Weapon System-of-Systems Development Roadmap Generation Method under Uncertainty (Xingliang Wang)
	#1570800110 Research on Cascading Failure Model and Robustness of Weighted Interdependent Networks (Xueming Xu)	#1570801979 Adaptive Control Based on Radial Base Function Neural Network Approximation for Quadrotor (Walid Alqaisi)	#1570801223 Architecture design of maritime joint emergency system-of-systems based on meta-model from the perspective of decision-making (Yu Guo)
	#1570802890 Seamless Runtime Transformations from Natural Language to Formal Methods - A usecase of Z-Notation (Misbah Awan)	#1570800299 Study on the Aviation Emergency Rescue System for Forest Firefighting based on SoSE (Yuanbo Xue)	#1570802931 Towards a Taxonomy of Approaches to Modern Complex Systems (Pin Chen)
	#1570802880 A System-of-Systems Approach to Analyzing Future Advanced Air Mobility Cargo Operations (Nicholas Gunady)	#1570802383 Improving Real-time Hand Gesture Recognition System for Translation: Sensor Development (Showni Titli)	
14:30 - 15:30	Session Chair: TBD, (Zoom admin: Karthik Subramanian) Virtual Room 1 (Online)	Session Chair: Richard Threlkeld, (Zoom admin: Saurav Singh) Virtual Room 2 (Online)	Session Chair: TBD, (Zoom admin: James May) Virtual Room 3 (Online)
	Session 5A:	Session 5B:	Session 5A:
	#1570801473 Systems-of-Systems Design Patterns: A Systematic Literature Review and Synthesis (Jakob Axelsson)	#1570802639 Complex System Methodology for Meta Architecture Optimization of the Kidney Transplant System of Systems (Richard Threlkeld)	#1570802870 Using the architecture of Socio-Technical System to analyse it vulnerability (Paul Perrotin)
	#1570802824 Constituent Systems Quality Requirements Engineering in Co-opetitive Systems of Systems (Pontus Svenson)	#1570803155 Low Cost Real Time Location Tracking with Ultra-Wideband (Anthony Ambrose)	#1570800879 Coupling Architecture Framework and Operation Research: the Case of NAF with Cost and Delay Driven Multi-Criteria Scheduling (Lorraine Brisacier-Porchon)
	#1570802343 On the Concepts of Capability and Constituent System Independence in Systems-of-Systems (Jakob Axelsson)	#1570805361 Reconciling Formal, Multi-Layer, and Hetero-functional Graphs with the Hetero-functional Incidence Tensor (Dakota Thompson)	#1570804906 High Level Petri Net Model for Control Problem of Autonomous Navigation in Container Terminal (Hela Kadri)
	#1570802820 Initiation and Formation of Constellations in Systems of Systems (Pontus Svenson)	#1570801387 Multimodal Person Identification through the Fusion of Face and Voice Biometrics (Marwa Saleh)	#1570804907 A Resilience Implementation Framework of System-of-Systems based on Hypergraph Model (Jun Jiang)
	#1570802831 Wicked Cases and Late Binding in System of Systems (Magnus Andersson)	#1570803153 iOS Based Pose Estimation and Gesture Recognition for Robot Manipulation (Nikhil Deshmukh)	#1570803934 Engineering Dependable AI systems (Eric Jenn)
#1570798837 Body-of-Knowledge development by using Artificial Intelligence (Juliette Mattioli)	#1570804889 Automated Consulting for Cloud Native Architectures (Ashley Rosilier)	#1570800284 OnToRisk - a formal ontology approach to automate cyber security risk identification (Avi Shaked)	
15:30 - 15:45 Break: The Atrium			
15:45 - 16:45	Session Chair: TBD, (Zoom admin: James May) Virtual Room 1 (Online)	Session Chair: TBD, (Zoom admin: Celal Savur) Virtual Room 2 (Online)	Virtual Room 3 (Online)
	Session 6A:	Session 6B:	Session 6C: Tutorial
	#1570802930 Social media and pandemic events: challenges for alert-warning systems (Sergio Luna Fong)	#1570801743 Natural Language Processing for Detecting Undefined Values in Specifications (Chia-Chu Chiang)	E-CARGO and Systems of Systems. (Haibin Zhu, Nipissing University, Canada)
	#1570800938 Condition monitoring and anomaly detection in cyber-physical systems (William Marfo)	#1570801206 ARC-SoISE: Towards a Reference Architecture for Constituents of Educational Systems-of-Information Systems (Priscilla Batista)	
	#1570802604 Modeling Chronic Care Delivery as a Dynamic System-of-Systems (Adam Mehdi)	#1570802920 Convergent Anthropocene Systems: Towards an Agile, System-of-Systems Engineering Approach (Amro Farid)	
	#1570799318 Evaluation of Natural Language Processing for Requirements Traceability (Christopher Laliberte)	#1570799580 Product Digital Quality Inspection using Machine Vision Systems - A Categorical Review (Mark Reyna)	
	#1570800212 Automated Quality Control System for Product Dimensional and Surface Analysis - An Industry Case Study (Aditya Akundi)	#1570802894 Modeling Energy Infrastructure of Future Electric Urban Air Mobility Operations (Seejay Patel)	
#1570802395 Utilization of Convolutional Neural Networks for Roadside Unit Placement (Sean Ackels)			

Day 3 (Wed 6/10)

Niagara Falls Visit

09:00-19:00

