



33rd Annual **INCOSE**
international symposium

hybrid event

Honolulu HI USA

Saturday, July 15

08:00-17:00 **Artificial Intelligence for Systems Engineers: Going Deep With Machine Learning and Deep Neural Networks**
Ali Raz (George Mason University); Barclay Brown (Raytheon Technologies); Ramakrishnan Raman (Honeywell International)

Sunday, July 16

08:00-17:00 **Digital threads with the Open Services for Lifecycle Collaboration (OSLC)**
Eran Gery, Ian Green (IBM); Jad ElKhoury (KTH Royal Institute of Technology)

Monday, July 17

10:45-11:25 **System Verification via Model Checking:
A case study of an autonomous multidifferential drive robot**
Ibukun Phillips, Robert Kenley (Purdue University Main Campus)

10:45-11:25 **Combining System Models and CAD for Change Scenario Management**
Hannes Hick (Technische Universität Graz); Benjamin Schleich (Technische Universität Darmstadt); Stefan Sanladerer, Karen Ryan, Jessica Trautner, Jean Piguert (Siemens Digital Industries Software); Fabian Wilking, Dennis Horber (Friedrich Alexander-Universität Erlangen-Nürnberg); Clemens Faustmann, Philipp Kranabittl, Stefan Kollegger, Matthias Bajzek (Technische Universität Graz); Sandro Wartzack (Friedrich-Alexander Universität Erlangen-Nürnberg)

14:15-14:55 **Blurring the Boundary: Integrating Systems of Systems at the Edge of Earth and Space**
Olivier 'Oli' de Weck (Massachusetts Institute of Technology (MIT))

Tuesday, July 18

13:30-14:10 **Enterprise Digital Transformation using a Sociotechnical System Approach**
Joana L F P Cardoso, Donna H Rhodes, Eric S Rebertisch (MIT)

16:15-16:55 **Responding to disruption: A System of Systems approach for digital transformation**
Samantha Papavasiliou (James Cook University)

All times are HST

Wednesday, July 19

- 10:45-11:25 **On Evaluating System Resilience by the Degree of Order Disruption**
Negin Moghadasi, James H. Lambert (University of Virginia)
- 11:30-12:10 **Toward Systems Engineering Meta Methodology**
Yaniv Mordecai (Tel Aviv University)
- 10:00-10:40 **Systems Thinking Applied to Higher Education Curricula Development**
Reza Rahdar (Embry-Riddle Aeronautical University); Mark London, Hong Jiang (Embry-Riddle Aeronautical University, Worldwide); Yuetong Lin (Embry-Riddle Aeronautical University)

Thursday, July 20

- 08:00-08:40 **Scalable, Flexible Implementation of MBSE and DevOps in VSEs: Design Considerations and a Case Study**
Cailin Simpson, Steven Simske (Colorado State University)
- 08:45-09:25 **Verification and Validation Test Framework Using a Model-Based Systems Engineering Approach**
Clara Ramirez, Amy Thompson (University of Connecticut)
- 10:00-10:40 **Seamless Transitions from Logical to Physical Avionics Architecture Models for Preliminary Aircraft System Design**
Jasmin Broehan, Nils Kuelper, Frank Thielecke (Hamburg University of Technology)

Posters/Key Reserve Papers

An Empirical Survey on the Prevalence of Technical Debt in Systems Engineering
Howard Kleinwaks (Colorado State University); Ann Batchelor (Colorado State University); Thomas Bradley (Colorado State University)

Explainable AI and Counterfactuals for Test and Evaluation of Intelligent Engineered Systems
Ali Raz (George Mason University); William Miller (Stevens Institute of Technology); Kuo-Chu Chang (George Mason University) Yan Lin (IFT); Erik Blasch (Air Force Office of Scientific Research)

Small satellite Extracurricular projects – Implementing a context-driven SysEng engine for improved adaptability and student agency
Håkon Kindem (Norwegian University of Science and Technology)

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