



International Council on Systems Engineering
A better world through a systems approach

AI in Systems Engineering, Education and Skill Development

Moderator: Shamsnaz Bhada (WPI)

Panelist: Ali Raz (GMU), Jyotirmay Gadewadikar (MITRE) and
Martin Serrano (Insight SFI Research Centre for Data Analytics)



What are we teaching when we are teaching AI in systems engineering

My internal dialog and how I came to these questions

- Are we teaching Python?
- Are we teaching Prompt Engineering?
Or how to effectively use generative models? Or LLMs in SE Process?
- Are we teaching machine learning ?
- Algorithmic development?
- Are we teaching AI as a tool that we are integrating across the lifecycle ?
should we focus on teaching the tool?
- Or is it a new analysis method? That we teach to help better our analytics such as trade space, risk analysis

Panelist

- Ali K. Raz is a professor in the Department of Systems Engineering and Operations Research at George Mason University's College of Engineering and Computing. His research focuses on understanding the collaborative nature of autonomy and developing systems engineering methodologies for integrating autonomous systems. Also chair of INCOSE AI working group
- Jyotirmay Gadewadikar is Chief of AI and Systems Engineering at MITRE, where he leads the integration of AI and enterprise systems for national security, public sector, and industry. Previously, he served as Chief Product Officer for Conversational AI at Deloitte and AI Strategy Lead at MIT. Jyotirmay has worked on the evolution from traditional engineering skills to the adoption of new AI-driven competencies
- Martin Serrano (PhD, MSc, BSc Eng.) is a Senior Research Fellow and Assistant Professor (adjunct Lecturer) at University of Galway's College of Science and Engineering and an International Associate at the National Institute of Standards and Technology (NIST). Dr. Serrano's research interest focuses on Distributed Systems, Cybersecurity and Data Privacy, Ontology Engineering, Semantic Web, Linked Data and AI/ML Information Systems and Modelling

Plan for the panel

- 1:20- 1:35... Perspective on developing an AI course and its learning objectives.
- 1:35-1:50... Current AI and SE work and the skills at MITRE and how should academia prepare the workforce/pipeline
- 1:50-2:15.. Highlight Martin's role on using AI for education/ regulation
- 2:15-2:25... Audience Questions