

Anticipating the Effects of Artificial Intelligence (AI) on Resilient Performance

Webinar series on Resilience Engineering

April 30th, 2026
Time: 15:00 CET
Duration: 60 min

Brief summary of content

This webinar will explore the intersection of Artificial Intelligence (AI) and Resilience Engineering (RE), showcasing how safety-critical industries are applying systems-based disciplines to guide the integration of AI into mission-critical functions. The webinar will highlight applications in healthcare, defense, and aviation, focusing on the challenges and opportunities of designing, developing, and assuring resilient performance in AI-infused systems.

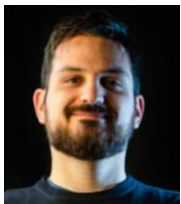
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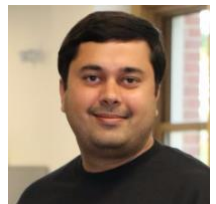
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Presentation

Artificial Intelligence (AI), Machine Learning (ML), and other forms of increasingly competent computation-based machine agents are being deployed to support mission-critical functions in safety-critical industries. The resilience engineering (RE) community has a wealth of foundational knowledge, including laws, theories and other patterns, that support and inhibit resilient performance. Even though the majority of the AI community in this second AI Gold Rush is either unaware or uninterested in applying that knowledge to their technology-based solutions, a number of safety-critical industries are actively exploring how to incorporate resilience engineering, cognitive systems engineering, human factors engineering, and other systems-based scientific disciplines for guidance on how to sustain system performance and realize the promised benefits of AI. This webinar will continue from previous IEA, REA, and RHCS webinars, briefly discussing the potential for Artificial Intelligence (AI) to both support and hobble resilient performance in high-consequence, safety-critical settings. It will showcase a number of techniques currently being used in safety-critical industries to guide the integration of AI into mission-critical functions. It will specifically highlight recent progress in Joint Activity Design heuristics, Joint Activity Testing, and the more nascent Joint Activity Monitoring. The webinar will highlight applications in healthcare, defense, and aviation, focusing on the challenges and opportunities of designing, developing, and assuring resilient performance in AI-infused systems.

Speaker

Dr. Mike Rayo, Ph.D.

Associate Professor in the Department of Integrated Systems Engineering
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Dr. Rayo works on equipping complex systems with the resilience needed to operate effectively amid both known and unforeseen challenges. His research focuses on enabling adaptive, joint human-machine performance across a range of settings—from small teams to large organizations—while promoting proactive safety practices that engage all organizational members in maintaining safe and efficient operations. He also advances the concept of societal-scale resilience by reimagining community collaborations as inclusive and balanced forms of teamwork.

Dr. Rayo is an Associate Professor in the Department of Integrated Systems Engineering at The Ohio State University. He also serves as Core Faculty at the Translational Data Analytics Institute and directs both the Cognitive Systems Engineering Laboratory and the CoEngage Laboratory. In addition, he is a scientific advisor on patient safety at OSU's Wexner Medical Center. His work has received support from prominent organizations such as the Air Force Research Laboratory, FAA, AHRQ, Eurocontrol, and others, and he has authored numerous publications on human-machine systems and patient safety. Dr. Rayo plays active roles in professional societies, currently serving as Chair-Elect of the Cognitive Engineering and Decision-Making Technical Group, Outreach Chair for the BIPOC Affinity Group of HFES, and Secretary of the Resilience Engineering Association. He is also a former Case Western Reserve University Dance Champion.

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