

Department of Electrical and Computer Engineering



TEXAS TECH UNIVERSITY

Edward E. Whitacre Jr.

College of Engineering

Fall 2024 Seminar Series

Seminar Title: *The Critical Role of Systems Engineering in the Development and Deployment of Industrial Cyber-Physical Systems*

Time: 3:00-3:50 PM, Monday, Sept 30, 2024

Location: Holden Hall 104

Speaker:

Chris Allison

Explorer Systems and Industry, LLC



Abstract:

Robotic systems are prime examples of Cyber-Physical Systems (CPS), where computational elements are tightly integrated with physical processes to perform complex, real-world tasks autonomously or semi-autonomously. These systems are widely used in manufacturing, material handling, and logistics industries, where precision, reliability, and safety are critical. The International Council on Systems Engineering (INCOSE) provides a well-established framework for systems engineering that is particularly valuable in developing robotic systems. This presentation explores why adopting the INCOSE systems engineering process is essential in developing and deploying robotic CPS, emphasizing its role in managing complexity, ensuring safety, and verifying performance.

Speaker Bio:

Chris Allison is the founder and owner of Explorer Systems and Industry, LLC, a consulting firm specializing in cutting-edge Industry 4.0 engineering solutions tailored to the supply chain sector. Previously, he worked at PepsiCo for 30+ years as a senior principal engineer and program manager for digital value chain (Digitizing the supply chain), automation, and electrification of the supply chain. He has managed large \$ 200M+ manufacturing and supply chain programs, cross-functional projects, highly technical projects, and complex multi-site international projects. He has consulted for Northrup Grumman, Tra-Pac (Terminal Operator in Port of LA), Amazon, Performance Team (now A.P. Moller- Maersk), Siemens A.G., and Covergix Automation.

Education:

BS Electrical Engineering – Texas Tech University 1990

MS Physics- University of Texas at Dallas 2008

Graduate Certificate in Product Creation and Innovative Manufacturing: Stanford University 2012

MS Systems Engineering – Johns Hopkins University 2015

MS Global Supply Chain Management – University Southern California 2016

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