

BEYOND DIGITAL TWINS, USING CONTENT-RICH AGENTIC MODELS TO DRIVE NEW BREAKTHROUGHS IN TOMORROW'S FACTORIES

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ABSTRACT

The future of leading-edge manufacturing demands innovations that generate real benefits for the business at a pace and scale we have never seen before. This talk will discuss major forces underway shaping manufacturing's future, transitioning from digital-twins to being increasingly driven by agentic and multi-model solutions that enable full-autonomy and augmented intelligence-based decision support systems in the factory. Their foundations require highly dependable, content-rich, and collaborative environments that can sense, perceive, reason, plan and execute complex production decisions safely around the clock. And as business drivers change, these capabilities must adapt and stay available and resilient, while being extended and scaled out quickly. The talk will outline how these tools are moving from being advisory in nature to the next frontier of execution by objectively characterizing complexity and disruptions autonomously and creating runways that unlock entirely new levels of agility and productivity that manufacturing demands.

SPEAKER BIOGRAPHY

DEVADAS PILLAI is a retired Intel Senior Fellow & former director who led the development and proliferation of simulation modeling methods & optimization tools across Intel's technology development and high-volume manufacturing fabs worldwide for over 2 decades. Pillai was Intel's first Fellow whose technical expertise is factory automation and robotics manufacturing. He has been honored many times by his industry peers as one of the most influential leaders who drove the vision and worldwide industry direction for 300 mm fab standardization resulting in pervasive fab automation and modeling tools for improving IC manufacturing. Pillai has written more than 90 peer-reviewed technical papers and keynote presentations in IEEE, ISSM, IEDM, SME, JES, IIE, SEMI and others in the fields of factory automation and operational modeling.