

UTC INSTITUTE FOR ADVANCED SYSTEMS ENGINEERING SEMINAR SERIES

Embarking on A Digital Journey of A 90 Year Old Manufacturing Company

Caterpillar is a world leading manufacturing company in mining, construction and diesel and gas engine industries, and one of oldest US fortune 100 companies. Traditionally, industries Caterpillar serve require companies to make and maintain heavy capital investments, and to build domain knowledge and customer relationship over a long period of time. Because of this reason, the barrier of entry for these industries were considered to be very high. However, advancement of digital technologies enabled any company who's versed with analytics and IT to overcome such barrier to come between Caterpillar and its customers. In early 2016, Caterpillar embarked on a journey to leverage digital technologies to deliver the best solutions to its customers in the most efficient way and to expand its customer base. This presentation illustrates what activities Caterpillar are focusing at the enterprise level, and provides some project examples, particularly in optimization and advanced analytics space. Examples include product and process optimization to improve performance, cost and quality, machine data analytics to gain insight on machines application, and emerging digital technology that can potentially disrupt our industry.

Chris Ha

Chris began his career with Caterpillar in 2000 as a senior research engineer within the research & development division. In 2004, Chris created optimization team, developing and deploying optimization tools and processes to solve various engineering and operation research problems for the enterprise. In 2010, Chris became the manager of optimization and advanced analytics group within the marketing and digital division where he is responsible for providing best commercially viable solutions to business partners and customers by utilizing advanced analytics capabilities such as optimization, computer vision and telematics. Chris is also a facility manager of Champaign Simulation Center located in Champaign, Illinois.

Before joining Caterpillar, Chris was an engineering specialist at Duke energy working on structural evaluation of pipe supports, metallic expansion joints and motor operated valves. Chris holds BS, MS and PhD in Civil Engineering from University of Illinois at Urbana-Champaign, and he also has numerous patents and technical publications.

Monday, September 12, 2016

1:00pm - 2:00pm

UConn, Storrs Campus – ITE Building 336

[To view live webcast click here](#)

Upcoming Distinguished Lectures

10/06/16 – Olivier de Weck
When is complex too complex?
Graph energy, proactive complexity
management and the first law of
systems engineering

10/17/16 – Wei Chen
Design under uncertainty;
multidisciplinary design
optimization; simulation-
based design

Upcoming Seminars

09/19/16 – Sayan Mitra
From models and data to proofs for
cyber-physical systems using
discrepancy

10/03/16 – Amit Surana
Koopman Operator Theoretic
Framework for Nonlinear System and
Control Applications

11/07/16 – Meaghan O'Neil
Applying Systems Engineering to the
Development of Healthcare
Capabilities

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