

## UTC INSTITUTE FOR ADVANCED SYSTEMS ENGINEERING

# Distinguished Lecture

### Recent Advances in Robot Controls for Factory Automation

Robots play significant roles in modern factory automation. On top of superior performance of basic functions such as speed, accuracy and vibration suppression, robots must be easy to use for operators, be able to effectively collaborate with human workers while ensuring safe work environment, and possess basic intelligent functions such as learning. In this talk, several recent projects on industrial robots performed at the Mechanical Systems Control Laboratory of the UC Berkeley will be reviewed. Specifically, human robot collaboration in peg-hole-insertion, safety assurance in human robot collaboration and robust iterative learning control for vibration suppression of industrial robots will be presented. Basic theory, simulation and experimentation will be covered.

### Masayoshi Tomizuka

Masayoshi Tomizuka received his B.S. and M.S. degrees in Mechanical Engineering from Keio University, Tokyo, Japan and his Ph. D. degree in Mechanical Engineering from the Massachusetts Institute of Technology in February 1974. In 1974, he joined the faculty of the Department of Mechanical Engineering at the University of California at Berkeley, where he currently holds the Cheryl and John Neerhout, Jr., Distinguished Professorship Chair. He currently serves as Director of CEO of Berkeley Education Alliance for Research in Singapore (BEARS). He teaches courses in dynamic systems and controls. His current research interests are optimal and adaptive control, digital control, motion control, and control problems related to robotics and rehabilitation, vehicles and mechatronic systems. He served as Program Director of the Dynamic Systems and Control Program of the National Science Foundation (2002-2004). He has supervised more than 100 PhD students to completion. He has published over 600 articles in professional journals and conference proceedings. He served as President of the American Automatic Control Council (AACC) (1998-99), and he chaired the IFAC Technical Committee on Mechatronic Systems. He is a Fellow of the ASME, the Institute of Electric and Electronics Engineers (IEEE), IFAC and the Society of Manufacturing Engineers. He is the recipient of the J-DSMC Best Paper Award (1995, 2010), the DSCD Outstanding Investigator Award (1996), the Charles Russ Richards Memorial Award (ASME, 1997), the Rufus Oldenburger Medal (ASME, 2002) and the John R. Ragazzini Award (AACC, 2006).

**Monday, November 28<sup>th</sup>, 2016**

**1:00pm - 2:00pm**

UConn, Storrs Campus – ITE Building 336

[To view live webcast click here](#)

Upcoming  
Distinguished Lectures

Upcoming  
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12/05/16 – Meaghan O’Neil  
Applying Systems Engineering to the  
Development of Healthcare  
Capabilities

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