Next Big Things in Robotics and Automation

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Abstract
This presentation first describes the evolution from tele-robotics to interactive robotics and to intelligent machines due to the silicon revolution. The impacts of this transformation to the manufacturing culture as well as the automated manufacturing research facilities are outlined. We then present several important current applications in robotics, especially the automation process in the development of new drugs. Next we discuss how the technology advances influence the development of research and particularly the robotics.

Biography
Tzyh Jong Tarn is currently a Senior Professor in the Department of Electrical and Systems Engineering at Washington University, St. Louis, USA. He also is the director of the Center for Quantum Information Science and Technology at Tsinghua University, Beijing, China. He has held visiting positions at Imperial College, England; the Rome University, Italy; Nagoya University, Japan; the Ecole Nationale Superieure de Mecanique, France; and the Academy of Science, USSR. He has also held many visiting positions in China, including as honorary professor at Tsinghua University, Beijing, University of Science and Technology, Hefei, Northeastern University, Shenyang; The Electronic University of Science and Technology, Chengdu.

An active member of the IEEE Robotics and Automation Society, Dr. Tarn served as the President of the IEEE Robotics and Automation Society, 1992-1993, the Director of the IEEE Division X (Systems and Control), 1995-1996, and a member of the IEEE Board of Directors, 1995-1996. He is the first recipient of the Nakamura Prize (in recognition and appreciation of his contribution to the advancement of the technology on intelligent robots and systems over a decade) at the 10th Anniversary of IROS in Grenoble, France, 1997, the recipient of the prestigious Joseph F. Engelberger Award of the Robotic Industries Association in 1999 for contributing to the advancement of the science of robotics, the Auto Soft Lifetime Achievement Award in 2000 in recognition of his pioneering and outstanding contributions to the fields of Robotics and Automation, the Pioneer in Robotics and Automation Award in 2003 from the IEEE Robotics and Automation Society for his technical contribution in developing and implementing nonlinear feedback control concepts for robotics and automation, and the George Saridis Leadership Award from the IEEE Robotics and Automation Society in 2009. In 2010 he received the Einstein Chair Professorship Award from the Chinese Academy of Sciences and the John R. Ragazzini Award from the American Automatic Control Council. He was featured in the Special Report on Engineering of the 1998 Best Graduate School issue of US News and World Report and his research accomplishments were reported in the “Washington Times”, Washington D.C., the “Financial Times”, London, “Le Monde”, Paris, and the “Chicago Sun-Times”, Chicago, etc. Dr. Tarn is a Fellow of IEEE and an IFAC Fellow.

***** ALL ARE WELCOME *****