

学术报告会

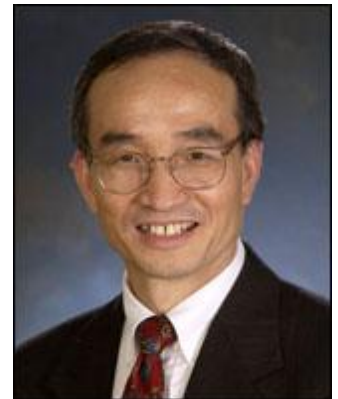
时间：2013年12月10日(周二)13:30

地点：电院群楼3-200会议室

Progress of Humanoid Robots in Rough Terrain Walking for Robotics Challenge

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Abstract:

Research on humanoid robots is booming in recent years, fueled by the advent of more powerful yet cost-effective technologies in computing, sensing, driver, controller, and mechanical systems. As a result, many humanoid robots have been developed world wide for the purpose of field automation, i.e., replacing human beings in a variety of environments such as nuclear power plants, forests, hospitals and restaurants, etc. which are accessible only to human beings. The progress is being made in a fast pace never seen before. This has inspired the recent international Humanoid Robotics Challenge Program organized by the U.S. government. In this talk, the progress of humanoid robots in rough terrain walking for the Robotics Challenge will be reported. This includes an innovative ski-type gait and quadruped walking gait by humanoid robots, that have never been studied before. The gait affords the robot a quick transition between biped and quadruped walking to achieve robust stability while maintaining flexibility in the use of hands.

Biography:

Prof. Yuan F. Zheng received the MS and Ph.D. degrees in Electrical Engineering from The Ohio State University (OSU), in Columbus, Ohio in 1980 and 1984, respectively. His BS degree was received at Tsinghua University in Beijing, China in 1970. From 1984 to 1989, he was with the Department of Electrical and Computer Engineering at Clemson University, in Clemson, South Carolina. In that period, Professor Zheng received the Presidential Young Investigator Award from the U.S. President Ronald Reagan in 1986. Since August 1989, he has been with The Ohio State University, where he is Winbigler Professor in Electrical and Computer Engineering. Professor Zheng served as the Department Chair at OSU between 1993 and 2004, and was elected to IEEE Fellow in 1997. Professor Zheng served as Dean of the School of Electronic, Information and Electrical Engineering at the Shanghai Jiao Tong University, on the part-time basis, in 2004-2008. Professor Zheng has served IEEE in different capacities for many years including an AdCom member, the Vice President for Technical Affairs of the Robotics and Automation Society, and Program Chairs of IEEE International Conference on Robotics and Automation in 1999 and in 2011, respectively.