Towards a tangible virtual world: Haptics HCI and a surgical simulation example

Abstract:
In Human-Computer-Interaction (HCI) area, audio and visual feedback has been widely used. However, there are still lots of open problems for haptics feedback both in fundamental and applied research aspects. In this talk, I will explain what haptic HCI is and the motivation to study haptic HCI. Then, framework of a haptic HCI system and key research topics will be introduced. After a short introduction of the research work in Haptics lab in Beihang University, a dental simulation system for training subjects' motor skill will be elaborated. Finally, some future research directions will be discussed.

Short Bio:

Dangxiao WANG received the Ph.D. degree in robotics from Beihang University, Beijing, China in 2004. Currently he is an Associate Professor at the State Key Laboratory of Virtual Reality Technology and System and the Robotics Institute in Beihang University. From 2004 to 2006, he had been a post Doc at the Beihang University. After that, he was an Assistant Professor in School of Mechanical Engineering and Automation, Beihang University from 2006 to 2007.

His research interests include haptic rendering, medical robotic system and haptic-based biometrics. He is a member of IEEE. He has been a Member of Executive Committee of IEEE Technical Committee on Haptics (IEEE TCH), and has served as the Vice Chair for Publications from 2011. He is the Publicity Co-Chair and Associate Editor of IEEE World Haptics Conference 2013. He served as the Award Committee member IEEE World Haptics Conference 2011. His paper on 6-DOF haptic rendering won the Best Manipulation Paper Finalist in IEEE International Conference on Robotics and Automation (ICRA 2011).