

学术报告会

时间: 2015年10月23日(周五) 10:00-11:00

地点: 电院群楼 2-410 会议室

Robots Perceive, Learn, and Adapt

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Abstract:

To enable robots to work in unstructured environments and perform manipulation tasks with uncertain physical interactions, we have developed a novel manipulation trajectory generating algorithm that extracts motion harmonics from demonstrated motions and then uses the motion harmonics to compute the optimal trajectory for new environments. The generated motion trajectory not only resembles the demonstrated motions, but also satisfies novel constraints in the new environments. To best facilitate manipulation motions and prepare for uncertain physical interactions, we have also developed new grasping strategies for robots to hold objects with a firm grasp to withstand the disturbance during their physical interactions.

Biography:

Dr. Yu Sun is an Associate Professor in the Department of Computer Science and Engineering at the University of South Florida. He co-chairs the IEEE RAS Technical Committee on Robotic Hands, Grasping, and Manipulation and the IEEE RAS Membership Services Committee. He also serves on the IEEE RAS Electronic Products and Services Board and the Member Activity Board. He is an Associate Editor of the IEEE Transactions on Robotics, IEEE Robotics and Automation Magazine, and Assembly Automation. Dr. Sun received his Ph.D. degree in Computer Science from the University of Utah in 2007, and his B.S. and M.S. degrees in Automatic Control from Dalian University of Technology in 1997 and 2000 respectively. His research interests include intelligent systems, robotics, cyber-physical systems, computer vision, virtual reality, and medical applications. His research works have been reported by the Discovery Science Channel, Bay News 9, and Univision (Spanish).