ロボティクス研究センターセミナー

From Blind Grasping to In-Hand Manipulation: A Proprioception-Based Approach



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Date: Nov. 9 (Mon.), 10:45 - 12:00　　11 月 9 日（月） 10:45 - 12:00

Venue: Seminar Room 3 (4F, East Wing)　　機械システム系第 3 演習室（イーストウィング 4 階）

Abstract

This lecture introduces over two decades of research on robotic grasping and manipulation, beginning with blind grasping studies conducted at Ritsumeikan University under Professor Suguru Arimoto. The lecture covers the fundamental principles of blind grasping, including perfect opposition and grasping force control without direct object sensing, and their extension to multi-fingered robotic hands. Finally, recent research on in-hand manipulation is presented, demonstrating continuous ball rotation using only joint information without tactile or force sensors, even under changing gravitational conditions. These studies highlight the potential of proprioception-based control for robust robotic grasping and dexterous manipulation.

Bio

- Dr. Eng. in Robotics, Ritsumeikan University, Japan, Sept. 2004, under the supervision of Prof. Suguru Arimoto
- Postdoctoral Fellow, COE Program, Ritsumeikan University, Japan, Oct. 2004–Sept. 2006
- Senior Research Scientist, Korea Institute of Robotics & Technology Convergence (KIRO), South Korea, Sept. 2006–Apr. 2008
- Postdoctoral Fellow, Korea Institute of Science and Technology (KIST), South Korea, May 2008–July 2009
- Principal Research Scientist, Korea Institute of Industrial Technology (KITECH), South Korea, Aug. 2009–Feb. 2024
- Professor, Department of Robotics, Hanyang University ERICA, South Korea, Mar. 2024–Present