

## Department of Biomedical Engineering

### Seminar Series

# Design, Planning, and Control for Versatile Robotic Manipulation

**Dr. Jungwon Seo**  
**Assistant Professor**

Mechanical and Aerospace / Electronic and Computer Engineering  
The Hong Kong University of Science and Technology

Date:	August 17, 2018 (Friday)
Time:	1:30pm - 3:00pm
Venue:	LI-3400, 3/F, Li Dak Sum Yip Yio Chin Academic Building

### **Abstract**

Robotic manipulation seeks to advance the way we handle objects of interest and interact with our environment using autonomous robotic systems. There is a wide range of applications such as transporting goods in warehouses, manipulating parts in factories, and handling everyday objects to serve people directly, in which robots with advanced manipulation capabilities can be useful. In typical object manipulation and transportation scenarios, robots must be able to get a good hold on

objects, transfer objects between secure grasps, and interact deliberately with the environment. Such tasks are still very difficult for robots today, whose versatility and dexterity are far below human levels. Achieving robotic dexterity and versatility in manipulation is thus one of the grand challenges in robotics. In this talk, I will introduce the research activities in my group on various robotic manipulation problems, ranging from kinematic to dynamic scenarios. Design, planning, and control techniques that will enable robots to skillfully manipulate objects and interact with the environment will be presented.

## **Biography**

Jungwon Seo is Assistant Professor of Mechanical and Aerospace / Electronic and Computer Engineering at the Hong Kong University of Science and Technology (HKUST). He is also with the Robotics Institute at HKUST. He holds a PhD degree in Mechanical Engineering and Applied Mechanics from the University of Pennsylvania (Penn), PA, USA under the advisement of Professors Vijay Kumar and Mark Yim. His research interests include a wide range of robotic manipulation problems (kinematics, planning, dynamics, and control). He received the B.S. degree in Mechanical and Aerospace Engineering from Seoul National University, Seoul, Korea and worked as an automotive engineer at Hyundai Motor Company, Korea before embarking on his graduate study at Penn.

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***All are Welcome!***

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