Chung Hee (John) Kim

CURRICULUM VITAE

CONTACT INFORMATION

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EDUCATION

Carnegie Mellon University — AUG 2021 –
Ph.D. in Robotics (Advisor: Dr. George Kantor)

The Hong Kong University of Science and Technology — FEB 2018 – FEB 2020
M.Phil. in Electronic and Computer Engineering (Advisor: Dr. Jungwon Seo)

The Hong Kong University of Science and Technology — SEP 2012 – DEC 2017
B.Eng. in Mechanical Engineering (First Class Honors)
* Overseas Student Exchange Program: **Georgia Institute of Technology**

RESEARCH EXPERIENCE

Research Assistant — AUG 2021 –
The Robotics Institute, Carnegie Mellon Univeristy, Pittsburgh PA
- Research focus: Intelligent manipulation, perception, and reinforcement learning in agricultural robotics

Research Assistant — FEB 2018 – JUN 2020
Robotic Manipulation Lab, HKUST Robotics Institute, Hong Kong
- Research focus: Dexterous robotic manipulation
- Utilized the industrial robot arm to develop an award-winning novel manipulation technique that can readily be applied to assembly automation

Undergraduate Research Opportunities Program — JUN 2017 – DEC 2017
The Hong Kong University of Science and Technology
- Research focus: Underwater remotely operated vehicle (ROV)
- Successfully demonstrated a working prototype of an underwater robot featured in Robotics Day 2017

PUBLICATIONS AND PATENTS

[1] **C. H. Kim**, G. Kantor, "Occlusion Reasoning for Skeleton Extraction of Self-Occluded Tree Canopies", *International Conference on Robotics and Automation (ICRA)*, 2023

[2] H. Freeman, E. Schneider, **C. H. Kim**, Moonyoung Lee, George Kantor "3D Reconstruction-Based Seed Counting of Sorghum Panicles for Agricultural Inspection", *International Conference on Robotics and Automation (ICRA)*, 2023

[3] **C. H. Kim**, K. H. Mak, J. Seo, "Planning for Dexterous Ungrasping: Secure Ungrasping through Dexterous Manipulation", *IEEE Robotics and Automation Letters*, 2022

[4] K. H. Mak, **C. H. Kim**, J. Seo, "Robust Ungrasping of High Aspect Ratio Objects Through Dexterous Manipulation", *IEEE Robotics and Automation Letters*, 2022

[5] Z. Tong, Y. H. Ng, **C. H. Kim**, T. He, J. Seo, "Dig-Grasping via Direct Quasistatic Interaction Using Asymmetric Fingers: An Approach to Effective Bin Picking", *IEEE Robotics and Automation Letters*, 2021

[6] Z. Tong, T. He, **C. H. Kim**, Y. Ng, Q. Xu, and J. Seo, "Picking Thin Objects by Tilt-and-Pivot Manipulation and Its Application to Bin Picking", *International Conference on Robotics and Automation (ICRA)*, 2020

[7] **C. H. Kim**, J. Seo, "System and Methods for Robotic Precision Placement and Insertion," *U.S. Patent Application 16/871,884*, filed February 25, 2021.

[8] **C. H. Kim**, J. Seo, "Shallow-Depth Insertion: Peg in Shallow Hole through Robotic In-Hand Manipulation", *IEEE Robotics and Automation Letters*, 2019

- *Best Paper Award in Robot Manipulation (ICRA 2019)*

Professional Experience

Engineer Aug 2020 – Jul 2021

Hong Kong Applied Science and Technology Research Institute, Hong Kong

- Developed web application for users to submit machine learning tasks to be executed on GPU server
- Conducted research in SOTA methods for synthetic face generation and customization using GANs

Robotics Engineer (Intern) June 2019 – Aug 2019

XYZ Robotics Inc., Shanghai, China

- Developed a Mini-ASRS (Automated Storage & Retrieval System) software package for calibration, robot trajectory planning and execution
- Received Outstanding Intern Award for contributing to optimizing company's Goods-to-Robot system

Sergeant Oct 2014 – Jul 2016

First Army Battalion, 177th Army Brigade, Republic of Korea Army, South Korea

- Led a team of 8 members as a squad leader, educating and applying hands-on training for the team to succeed in operations and tasks
- Received Soldier of the Year Award from battalion commander for respectful leadership to soldiers

Honors and Awards

ICRA 2022 RAS Travel Grant	2022
ICRA 2019 Best Paper Award in Robot Manipulation	2019
ICRA 2019 RAS Travel Grant	2019
University Grants Committee (UGC) Research Travel Grant	2019
HKUST Academic Achievement Medal (*top 1% of graduates*)	2017

Graduate Courseworks

CMU 16-825	Learning for 3D Vision	Spring 2023
CMU 16-711	Kinematics, Dynamics, and Control	Spring 2023
CMU 16-740	AI for Manipulation	Fall 2022
CMU 10-715	Advanced Introduction to Machine Learning	Fall 2022
CMU 11-785	Introduction to Deep Learning	Spring 2022
CMU 16-833	Robot Localization and Mapping	Spring 2022
CMU 16-720	Computer Vision	Fall 2021
CMU 16-811	Math Fundamentals for Robotics	Fall 2021
HKUST ELEC5660	Introduction to Aerial Robotics	Spring 2019
HKUST ELEC5640	Robotic Manipulation	Fall 2018
HKUST COMP5212	Machine Learning	Fall 2018
HKUST ELEC6910	Robot Perception and Learning	Spring 2018
HKUST EESM5730	Modern Control Systems Design	Spring 2018

Competences

Languages English (*native*), Korean (*native*), Mandarin Chinese (*conversational*)

Skills Python, C++, MATLAB, PyTorch, ROS, git, SolidWorks, Adobe Photoshop & Illustrator, LaTeX

Hobbies Acoustic Guitar (*self-taught*), Tennis

Last update: January 20, 2023