



SEMINAR

Range Sensors in Robotics

Date: 11 August, 2026 (Tuesday)
Time: 2:00 p.m.
Venue: Room 7-34 & 7-35, Haking Wong Building
HKU

Speaker: Professor Ayoung Kim
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Abstract:

Range sensors have become fundamental to autonomous robots operating in complex and dynamic real-world environments. While LiDAR provides highly accurate geometric measurements, radar offers robust perception under adverse weather, darkness, dust, and smoke, making the two sensing modalities highly complementary. This talk presents recent advances in robotic perception using range sensors, covering LiDAR and radar odometry, SLAM, place recognition, multi-modal sensor fusion, and uncertainty-aware state estimation. The talk will also highlight recent benchmark datasets and emerging research directions in robust robotic perception. Finally, I will discuss the future role of range sensing in Physical AI and embodied intelligence, where resilient perception will be essential for enabling robots to operate safely and autonomously in the real world.

Biography:

Ayoung Kim is a Professor in the Department of Mechanical Engineering at Seoul National University (SNU), where she leads the Robust Perception for Mobile Robotics (RPM) Lab. Her research focuses on perceptual robotics, SLAM, state estimation, and spatial representation learning across diverse sensor modalities, including LiDAR, radar, thermal infrared, and vision. She is a co-editor of the forthcoming SLAM Handbook (Cambridge University Press), a comprehensive reference for the field. She received her B.S. and M.S. in Mechanical Engineering from SNU, and her M.S. in Electrical Engineering and Ph.D. in Mechanical Engineering from the University of Michigan, Ann Arbor. Before joining SNU in 2021, she was a professor at KAIST (2014–2021), and has held visiting positions at the Oxford Robotics Institute and the Boston Dynamics AI Institute. Within the IEEE Robotics and Automation Society, she currently serves as Senior Editor of IEEE Robotics and Automation Letters (RA-L) and Associate Editor of the International Journal of Robotics Research (IJRR) and IEEE Transactions on Field Robotics (T-FR). She is also an IEEE RAS Distinguished Lecturer (2026–2028). She received the 2026 MassRobotics Rising Star in Robotics Medal in recognition of her contributions to robotic perception and autonomous navigation.

ALL INTERESTED ARE WELCOME

For further information, please contact Professor F. Zhang at 3917 7909.