香港科技大學
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

土木及環境工程學系
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

SEMINAR

CONSTRUCTION ROBOTICS – PAST, PRESENT, FUTURE

Speaker

Prof. Thomas Linner

OTH Regensburg, Building Lab

Abstract

This seminar examines systems engineering approaches for the development and implementation of next-generation construction robotics. As over 400 companies worldwide engage in this field, the shift from trial-and-error prototyping to structured, model-based workflows is accelerating. Central to this transition is a systematic procedure model that combines virtual simulation, motion studies, hardware development, and real-world validation in iterative feedback loops. Key topics include robot-oriented design, modularity, cobotics, and automation strategies for both on-site and off-site construction. Case studies from international collaborations—including projects in Hong Kong, Japan, and Europe—illustrate applications such as robotic facade installation, interior finishing, and human-robot collaboration in renovation. The seminar also highlights advances in research and education infrastructure, including BIM2Robot pipelines, scaled prototyping platforms, and robotics teaching cells, laying the foundation for broader commercial adoption supported by performance testing, strategic roadmapping, and business model innovation.

Biography

Prof. Thomas Linner is a leading expert in construction robotics, with over 20 years of experience at the interface of research, development, and industry. He is Professor at OTH Regensburg, where he leads the Laboratory for Automation and Robotics in Construction, focusing on smart, resilient, and human-centric solutions. As CEO of CREDO Robotics GmbH, he supports global industry partners in the strategic implementation and commercialization of construction automation. His international academic work includes positions at the Technical University of Munich and Keio University, and collaborations with institutions such as the University of Tokyo, the University of Hong Kong, and the University of Cambridge, as well as companies like Kajima, Bouygues Construction, and Doka. Author of over 200 publications and the Cambridge Handbooks in Construction Robotics series, he has also held leadership roles including Vice President of IAARC and member of the DIN Presidial Committee.

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