

Seminar



Time: 10:30 a.m. on 2 March 2023 (Thursday)

Venue: B6619 BME/MNE/ADSE Conference Room, 6/F, YEUNG

(organized by Dr. Pakpong Chirarattananon)

SOFT TACTILE SENSOR-BASED SWARM NAVIGATION

Dr. Trung Dung Ngo

Faculty of Sustainable Design Engineering
University of Prince Edward Island, Canada

Abstract

In this talk, I will address problems and solutions for swarm navigation. A swarm of mobile robots may encounter unknown large-sized obstacles that partially and entirely block its pathway when navigating towards its designation. To deal with these challenges, I will present our newly proposed approach of soft tactile-based wall-following strategies and how to incorporate these strategies to design distributed behaviour-based controllers. I will illustrate our different coordination strategies capable of dealing with uncertain situations raised during swarm navigation. This is a joint collaborative research project between the MoreLab-UPEI, Canada and SoftHaptics Lab-JAIST, Japan.

Biography

Dr. Trung Dung Ngo received Ph.D. degree in Electrical and Electronic Engineering (Robotics), Aalborg University in 2008, M.Sc. degree in Computer Systems Engineering (Robotics), the Maersk Mc-Kinney Moller Institute, University of Southern Denmark in 2004, and B.Sc. degree from Vietnam National University in 2000. Dr. Ngo is currently a Full Professor at Faculty of Sustainable Design Engineering, University of Prince Edward Island (UPEI) where he is the founder and director of the More-Than-One Robotics laboratory (www.morelab.org) and the lead researcher of the Centre for Excellence in Robotics and Industrial Automation. Before joining UPEI, he was the faculty member of the Department of Electronic Systems, Aalborg University, and the Faculty of Science, University of Brunei. His research interests include multi-robot systems, modular robotics, and human-robot cooperation. Dr. Ngo has supervised over 50 postdoctoral and graduate students. He was the recipient of the UPEI Faculty Association's Merit Award for Scholarly Achievement in 2020. He is a Senior Member of IEEE and a Professional Engineer registered at EngineersPEI, Canada.