

2020 IEEE/SICE

International Symposium on System Integration (SII2020)

Hawaii Convention Center, Honolulu, Hawaii, USA

January 12-15, 2020

Special Session on

“Integration for Robotics toward Sustainable Development Goals (SDGs)”

organized by

Principal Organizer: Van Anh Ho,

Affiliation: Japan Advanced Institute of Science and Technology (JAIST)

Organizer 1: Shinichi Hirai

Affiliation: Ritsumeikan University

Organizer 2: Trung-Dzung Ngo,

Affiliation: University of Prince Edward Island

Organizer 3: Hung La,

Affiliation: University of Nevada at Reno

Abstract of proposed special session:

This special session solicits original papers in robotic integration toward fulfillment of Sustainable Development Goals (SDGs):

<https://sustainabledevelopment.un.org/sdgs>

Came into effect recently, SDGs are universal calls to action for protecting the planet, and ensuring all people enjoy quality education, utilities for life, and prosperity. Among 17 goals of SDGs, there are many goals that require the innovation of robotics to be successfully fulfilled, such as innovative industry/infrastructure, sustainable environment, quality education, and so on.

To enable robots to contribute to universal goals in many fields, robots are not only efficient in operation, but also agile/flexible and fully aware of surrounding environment, including safe interaction with humans. This requires an intensive integration of robotic technical issues, from designing, fabrication to artificial intelligence, cognition, and perception. It also brings a great chance for robotics field to engage deeply and efficiently to actions for a sustainable development.

Brief description of the area of interest with special focus on why we should believe this is an interesting and significant topic?

Topics of interest include, but are not limited to:

This special session aims to call for papers in interdisciplinary field, focusing on efficient integration of robotic techniques in emerging fields such as soft robotics, field robotics, multirobots, industrial robots, and related applications in environment inspection, human-robot interaction, innovative manufacturing, education robots, and so on. These fields and applications are highly expected to

help fulfill universal goals in SDGs. Detailed topics are as followed (but not limited to):

1. Integration in soft robotics: soft material robots, soft sensor/actuator and its integration, applications
2. Integration in field robotics: environmental/infrastructural inspection, waste sorting, cleaning.
3. Integration in modular/multi robots: sensing, perception, motion planning, control design, machine learning
4. Smart manufacturing: big data processing, advanced robots, 3D/4D printing

Submissions Procedure: All the instructions for paper submission are included in the conference website <https://sice-si.org/conf/SII2020/papersubmission.html>.