

PAPER SUBMISSION

We encourage the presentation of early research on emerging topics and early results, and the participation of young researchers in order to promote themselves within the community.

We welcome contributions of 4 to 8 pages length submitted as PDF in the standard IEEE format.

All submissions will be peer-reviewed and selected based on their originality, technical quality, clarity and their relevance to workshop topics.

IMPORTANT DATES

Paper submission deadline:

April 12th, 2019

Author acceptance notification:

April 27th, 2019

Camera-ready submission:

May 6th, 2019

Workshop date:

May 24th, 2019

WORKSHOP ORGANIZATION

Authors of accepted papers are expected to give a lightning talk (3 minutes) and to present a poster at the workshop. A number of papers will be selected for 15 minutes oral presentations. All accepted papers will be available in the workshop website and outstanding submissions will be invited for a Journal Special Issue.

ORGANIZERS

Research Assoc., Arturo Gomez Chavez
Dr. Enrica Zereik

Research Assoc., Christian A. Mueller
Prof. Francesco Maurelli

Jacobs University Bremen gGmbH
Italian National Research Council
 **JACOBS**
UNIVERSITY  **INM**
Consiglio Nazionale delle Ricerche

Recently, there has been rapid progress in the development of Unmanned Underwater (UUVs) and Remote Operating Vehicles (ROVs); and marine robotics is expected to have a tremendous impact in the coming years not only in ocean exploration but also exploitation. The capability to perceive the working unstructured and dynamic environment is an essential step towards the development of effective and reliable robotic systems, able to work autonomously and react to external events. Numerous challenges arise while pursuing such objectives in underwater scenarios; contrary to its industrial counterpart, the environment cannot be controlled or tailored to suit an automation task, i.e., lighting, object poses, etc.

This workshop aims to provide a broad and interesting overview of the best practices to enable robust perception in underwater robots. Keynote talks from researchers and industry partners, with ample field experience, will generate new ideas, collaborations and research interests. The main topics to be addressed in the workshop are mentioned below, but these do not prevent discussions about related subjects.

Main Topics of Interest

- Object detection and recognition in different sensor domains (stereo vision, lasers, acoustic sensors, i.e. sonars, multibeam).
- Image enhancement and distortion removal e.g., dehazing.
- Sensor fusion and signal processing.
- Environment modeling e.g., bathymetry, 3D representations, SLAM.
- Simulated environments and continuous system integration e.g., hardware-in-the-loop, synthetic data generation, simulation to real-world transition.
- Deep learning practices and machine learning pipelines.
- Heavily tested systems in field trials and best practices for deployment and data management.

Papers submissions on related subjects are welcomed as well!

Invited Speakers – Alphabetical Order

- Prof. Andreas Birk – Jacobs University Bremen gGmbH
- Dr. Yogesh A. Girdhar – Woods Hole Oceanographic Institution
- Prof. Michael Kaess – CMU Robot Perception Lab
- Dr. Ayoung Kim – Korean Advanced Institute of Science and Tech.
- Prof. Pere Ridao – University of Girona, UW Robotics Lab (CIRS)
- Katherine A. Skinner – University of Michigan, Robotics Institute
- Dr. Jakob Schwendner – Kraken Robotik GmbH (Industry speaker)



Further details about the workshop and the submission process can be found on our website:
icra-2019-uwroboticsperception.ge.issia.cnr.it