CALL FOR PAPERS

2019 IEEE Smart World Congress

Workshop on smart robots to construct future smart worlds (SR4CSW)

Along with the advances in Artificial Intelligence and Mechatronics, it becomes clear that future smart worlds will include a wide range of smart, autonomous robots, operating in diverse applications and settings, helping us to perform difficult tasks in more efficient ways. In this workshop, we focus particularly on smart robots that can help constructing a better smart world of the future.

Having as a starting point recent advances in manufacturing and construction robotics that can help humans perform product development and constructions in more efficient and safer ways, the workshop will aim at consolidating views in advanced technologies, recent trends and major challenges for robots in real environments, as well as future key applications for robots that can be used in diverse domains essential to developing smart worlds of the future. In this context, emphasis will be put in multiple research topics related to service robots that operate in the domains of agile manufacturing and constructions. As for the latter, a particular focus of the workshop will be put on recent advances in the fields of underground and underwater service robots, which unveil an extra, major dimension of future service robot applications, dedicated to extending the reach of the current robots' operational space to the sub-surface.

In order to realize such extended reach and application of smart robots in real manufacturing and construction environments, major challenges still need to be addressed, related to smart mechatronics design and development, as well as to robust robot perception and cognition. In this context, the SR4CSW workshop provides a platform to disseminate recent research efforts that aim at addressing the above challenges, and help exchanging views and ideas that can further fertilize the field of smart robots aiming to construct future smart worlds.

Topics of interest

The workshop topics of interest include but are not limited to:

- Mechanical design for robots in manufacturing, construction and subsurface sites
- System design and integration for robots in construction and subsurface applications
- Control engineering applied for robots in constructions and subsurface sites
- Drilling and propulsion approaches for underground robots
- Path planning and motion planning in construction and subsurface sites
- Robot navigation and locomotion in the subsurface
- Field, underground and underwater robot localization
- HRI interfaces for robots in construction and subsurface sites
- AI and machine learning approaches for human-robot-environment interaction
- Robot vision in construction and subsurface sites
- Multimodal sensor fusion for robot perception in manufacturing, construction and subsurface applications
- Robot cognition methods and approaches for manufacturing, construction and subsurface sites
- Simulation environments for robots in manufacturing, construction and subsurface sites

- Reactive and emergency behaviors for robots in construction and subsurface sites
- Ground-breaking applications for future smart robots in manufacturing, construction and subsurface sites

Workshop organizers

- Prof. Carlos Balaguer, University Carlos III of Madrid, Spain
- Dr. Santiago Martinez de la Casa Diaz, University Carlos III of Madrid, Spain
- Dr. Dimitrios Tzovaras, Centre for Research and Technology Hellas, Greece
- Dr. Dimitrios Giakoumis, Centre for Research and Technology Hellas, Greece

Workshop Program Committee members

- Sandra Alvarez de Miguel, UC3M, Spain
- Miquel Cantero, Robotnik, Spain
- Sebastian Fischer, TT, Germany
- Patrick Harkness, University of Glasgow, Scotland, UK
- Ioannis Kostavelis, CERTH, Greece
- Ioannis Mariolis, CERTH, Greece
- Elisabeth Menendez Salvador, UC3M, Spain
- Andreas Kargakos, CERTH, Greece
- Alessandro Simi, IDS, Italy
- Evangelos Skartados, CERTH, Greece
- Aggeliki Topalidou – Kyniazopoulou, CERTH, Greece
- Panagiotis Vartholomeos, Singular Logic, Greece

Submission & Deadlines

- Submissions due: 26 April, 2019
- Notification of acceptance: 10 May, 2019
- Camera-ready papers due: 19 May, 2019

Submission Instructions

All papers should be of up to 6 pages including all figures, tables, and references. At most 2 additional pages with the pages overlength charge. Papers need to be prepared according to the IEEE CPS format via IEEE Manuscript Templates for Conference Proceedings. All accepted workshop papers will be included in the IEEE SWC 2019 proceedings, published by IEEE-CS Conference Publishing Services. At least one of the authors of any accepted paper is required to attend the conference.

Contact

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