

# Call for Contributions

## Submission:

1. **Inform the Chair:** with the Title of your Contribution

2. **Submission URL:**

<https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=SOFTENG+2018+Special>

Please select Track Preference as **SEMR**

Special track

## **SEMR: Software Engineering for Mobile Robotics**

### **Chair and Coordinator**

Dr. Darko Bozhinoski, Universite Libre de Bruxelles, Belgium; email: [darko.bozhinoski@gssi.infn.it](mailto:darko.bozhinoski@gssi.infn.it)

along with

**SOFTENG 2018**, The Fourth International Conference on Advances and Trends in Software Engineering  
April 22, 2018 to April 26, 2018 - Athens, Greece <https://www.iaria.org/conferences2018/SOFTENG18.html>

Mobile Robotics is one of the most challenging domains for software engineering. Mobile robots need to operate in open, dynamic, unpredictable and partially observable environments. In such contexts, it is becoming more and more profitable the collaboration between humans and the robots. Over the last decades, research in robotics has made huge progress in the fields of image recognition and processing, planning, control, and collaboration. However, we currently have at our disposal a myriad of isolated solutions that are hard to reuse and combine. Software engineering is called to play a key role in securing this new technology's affirmation by making it pervasive and ubiquitous. Powerful methodologies are required to assist the development of robotic software systems, which are expected to be able to: (i) operate in unpredictable environments, (ii) collaborate with other systems for solving problems that could not be solved otherwise neither by one single robot nor by a team of robots belonging to the same category, and (iii) automatically deal with unexpected emergent behaviors that might potentially cause severe misshapes.

Engineering applications for mobile robots require integrating solutions from experts of various domains, including navigation, path planning, manipulation, localization, human-robot interaction, etc. As robots often operate in dynamic, partially observable environments special efforts shall be devoted to trade-off analysis of quality attributes like adaptability, robustness, safety, and security.

The goal of SEMR is to bring together researchers from participating domains with practitioners to identify new frontiers in robotics software engineering, discuss challenges raised by real-world applications, and transfer latest insights from research.

### **Topics of interest include, but are not limited to:**

- Analysis of challenges in robotic software engineering
- Architectures that lead to reusable robotic software engineering
- Challenges for defining and integrating domain-specific languages for the design of robotic systems
- Continuous integration and deployment in robotics
- Description and analysis of design principles promoting quality of service (e.g., performance, energy efficiency) attributes
- Engineering the collaboration of multiple (heterogeneous) robots
- Metrics to measure non-functional properties (e.g., robustness, availability, etc.) and their application
- Software engineering best practices in robotics

- Processes and tools supporting the engineering and development of robotic systems
- Variability, Modularity, and Reusability in robotics
- Validation and verification of robot software

### **Important Datelines**

- Inform the Chairs: As soon as you decided to contribute
- Submission: Jan 17, 2018
- Notification: Feb 22, 2018
- Registration: Mar 8, 2018
- Camera ready: Mar 15, 2018

*Note: These deadlines are somewhat flexible, providing arrangements are made ahead of time with the chair.*

### **Contribution Types**

- Regular papers [in the proceedings, digital library]
- Short papers (work in progress) [in the proceedings, digital library]
- Posters: two pages [in the proceedings, digital library]
- Posters: slide only [slide-deck posted on [www.aria.org](http://www.aria.org)]
- Presentations: slide only [slide-deck posted on [www.aria.org](http://www.aria.org)]
- Demos: two pages [posted on [www.aria.org](http://www.aria.org)]

### **Paper Format**

See: <http://www.aria.org/format.html>

Before submission, please check and comply with the editorial rules: <http://www.aria.org/editorialrules.html>

### **Publications**

Extended versions of selected papers will be published in IARIA Journals: <http://www.ariajournals.org>

Print proceedings will be available via Curran Associates, Inc.: <http://www.proceedings.com/9769.html> -

Articles will be archived in the free access ThinkMind Digital Library: <http://www.thinkmind.org>

The proceedings are sent for indexing to ISI Thomson Reuters by Filodiritto/InFOROmatica Publisher, Italy

### **Paper Submission**

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### **Registration**

- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
- Registration fees are available at <http://www.aria.org/registration.html>

### **Contacts**

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