

# Call for Papers

## Internetworking Unmanned Ground and Aerial Systems (INUGAS) Symposium

*The 16<sup>th</sup> International Conference on Wireless Communications and Mobile Computing  
IWCMC 2020*

IWCMC 2019 Website: <http://iwcmc.org/2020/>

Submission Link: <https://edas.info/newPaper.php?c=26206>

Limassol, Cyprus

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### Chair:

Anis Koubaa, Prince Sultan University, Saudi Arabia, [akoubaa@psu.edu.sa](mailto:akoubaa@psu.edu.sa)

### Co-Chair:

Mohamed Younis, University of Maryland-Baltimore County, [younis@umbc.edu](mailto:younis@umbc.edu)

## Scope

Robots and Unmanned Aerial Vehicles (UAVs) - also known as Drones, are becoming increasingly popular. Although these have been around for already a few years, applications' developers and researchers are realizing more recently the potential of these ground and flying robots in civil applications such as remote sensing, smart cities, surveillance, disaster management and recovery, patrolling, aerial survey, border security, to name a few. Although these low-cost UAVs/Robots can be utilized in many beneficial ways, the strictly limited processing capabilities as well as their low on-board storage raise several challenges. In fact, low-cost and battery-powered UAVs are unable to cope efficiently with the requirements of computation-demanding applications (e.g., on-board image processing) encompassing real-time data and reliability constraints. Furthermore, communication with robots and drones are usually confined to a limited range.

In recent years, there is an increasing trend to integrate robots and UAVs into the Internet and to leverage the abundant cloud computing resources to offload computations from the robots/UAVs to the cloud. These efforts have promoted the cloud robotics initiatives which aim to achieve the aforementioned objectives. However, there are still several open research questions and challenges: are the current network technologies and resources sufficient for enabling the Internet of Drones/Robots? Is offloading computation to the cloud always efficient considering the communication overhead that results from this operation? What are the implications of using drones and robots over the Internet on the quality of service (QoS) of their applications? What are the security threats that would result from using robots and drones over the Internet? How safe is the use of robots/drones through networking infrastructures? How the Internet would promote the collaboration between drones and robots and their users? How Drones/Robot integration with the cloud can be beneficial for artificial intelligence (AI) applications?

The objective of this Symposium is to bring together state-of-the-art contributions that would address some of the several challenges pertaining to the integration of robots and drones over the Internet and the use of cloud resources for offloading computations. The Symposium covers all the possible aspects of this integration including but not limited to, networking, communication, quality of services, security, safety, cooperation,

artificial intelligence, etc.

The Symposium welcomes technical papers, in addition to papers reporting experimental prototypes and studies on Internet of Drones and Robots. Survey papers can also be accepted if they provide an comprehensive review and analysis of the state of the art.

## Topics

Authors are invited to submit previously unpublished papers to this Symposium. Topics include, but are not limited to:

- Cloud robotics
- Networked drones/robots
- Computation offloading
- Internet-based drones/robots applications
- Cooperation of drones/robots over the Internet
- Cloud-based deep learning frameworks for drones/robots
- Security and safety of Internet of drones/robots
- UAV/Robot edge/fog computing
- Network resource allocation for UAVs
- Artificial Intelligence applications
- Web Services for Internet of Drones/Robots
- Quality of service (QoS) tradeoffs
- Real-time guarantees
- 5G for the Internet of drones/robots

## Important Dates

- Submission: January 10, 2020
- Acceptance notification: March 30, 2020
- Camera-ready paper submissions: April 30, 2020

## Submission Guidelines

Prospective authors are invited to submit original technical papers—up to 6 pages of length, using the EDAS link: <https://edas.info/newPaper.php?c=26206> for possible publication in the IWCMC 2020 Conference Proceedings, which will be submitted to the IEEE Xplore. Selected papers will further considered for possible publication in three special issues in the following Journals. For more information, visit: <http://iwcmc.org/2010/>

1. The International Journal of Sensor Networks (IJSNet)  
<http://www.inderscience.com/browse/index.php?journalCODE=ijsnet>
2. The International Journal of Autonomous and Adaptive Communications Systems (IJAACS)  
<http://www.inderscience.com/jhome.php?jcode=ijaacs>
3. KSII Transactions on Internet and Information Systems: <http://www.itiis.org/>
4. Peer-to-Peer Networking & Applications:  
<http://www.springer.com/engineering/signals/journal/12083>
5. Cyber-Physical Systems journal: [www.tandfonline.com/loi/tcyb20](http://www.tandfonline.com/loi/tcyb20)

**Note:** There will be best paper award, best Symposium award and best Workshop award.

## **TPC Members**

- Uthman Baroudi (KFUPM, Saudi Arabia)
- Ricardo Severino (ISEP-IPP, Portugal)
- Kai Li (CISTER Research Lab, Portugal)
- Mohamed Khalgui (Xidian University, China)
- Adel Ben Manouar (Canadian University Dubai, UAE)
- Nidal Nasser (Alfaisal University, Saudi Arabia)
- Trung Q. Duong (Queen's University Belfast, UK)
- Liang Wang (Northumbria University, UK)
- Abdelfettah Belguith (King Saud University, Saudi Arabia)
- Zahid Khan (Prince Sultan University, Saudi Arabia)
- and others (to be invited).