

Dear Colleagues,

Please consider a submission to AI for Autonomous Unmanned Systems Symposium (AAUSS) with The 21th International Wireless Communications & Mobile Computing Conference (IWCMC 2025).

12–16 May 2025 | Marriott Hotel Downtown, Abu Dhabi, UAE

SCOPE

Unmanned Autonomous Systems (UAS), including robots, drones, and underwater vehicles, are becoming more mature and being integrated into several applications to fulfill different critical missions. With the emergence of artificial intelligence, UAS have boosted their performance. They also enabled new kinds of advanced technologies leveraging the power of AI, including smart cities, surveillance, self-driving cars, target detection and tracking, smart agriculture, law enforcement, logistic, and transportation, to name a few.

These applications create new specific technical challenges. Considering the computation-intensive requirements of AI models, their real-time execution of battery-based edge devices, typically used on UAS, poses a significant challenge. Security and privacy are other primary concerns, mainly when UAS are deployed through cloud-based environments. There are several other problems, including low-resolution aerial image processing, zero-shot classification of UAS-collected images, reinforcement learning-based control, and edge-based processing vs. cloud-based computation offloading, to name a few.

This Symposium aims to bring together state-of-the-art contributions that would address several challenges pertaining to leveraging the use of AI with UAS. The Symposium welcomes technical papers, in addition to papers reporting experimental prototypes and studies on the use of AI with UAS.

TOPICS

Authors are invited to submit previously unpublished papers to this Symposium.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

- Cloud robotics for AI applications
- Distributed/Federated/Split/Reinforcement learning
- UAS architectures in beyond 5G and 6G
- Large language models for UAS
- Mobility management for integrated terrestrial-satellite networks
- Integrated sensing and communications for UAS
- Software defined networking (SDN) and network function virtualization (NFV) in support of UAS
- Self-driving cars
- Deep learning models for aerial image processing
- Attention modules for UAS-based AI models
- AI-model acceleration for data sensing and fusion in UAS
- Machine learning and cybersecurity in UAS applications
- AI-based models for UAS safety
- Computation offloading
- AI-based smart cities/smart agriculture with UAS
- AI-based surveillance systems
- UAS-enabled IoT, wireless sensor networks, or mobile edge computing (MEC)

- Computer vision for UAS

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=32919> for possible publication in the IWCMC 2025 Conference Proceedings, which will be submitted to the IEEE Xplore.

Selected papers will further considered for possible publication in the special issues in the following Journals.

- The International Journal of Sensor Networks (IJSNet)
- The International Journal of Autonomous and Adaptive Communications Systems (IJAACS)
- KSII Transactions on Internet and Information Systems
- Peer-to-Peer Networking & Applications
- Cyber-Physical Systems journal

Note: There will be best paper award, best Symposium award and best Workshop award. Best Selected Papers will be proposed for submissions in MDPI Remote Sensing with special discounts.

IMPORTANT DATES

- Paper Submission Deadline: January 15, 2025
 - Paper Acceptance Notification: March 15, 2025
 - Camera-ready Paper Submissions: April 15, 2025
 - Registration Deadline for Authors: April 15, 2025
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Honorary Chair: Anis Koubaa, Prince Sultan University, KSA

Chairs:

Kai Li, CISTER Research Centre, Portugal

Avleen Malhi, University of Warwick, UK

Salvatore D'Oro, Northeastern University, USA

Linlin You, Sun Yat-sen University, China

Lahouari Ghouti, Prince Sultan University, KSA

Wadii Boulila, Prince Sultan University, KSA
