Call for papers

International workshop on

AI native Communications Systems - towards Integrated Intelligent and Highly Efficient Communications Systems (IIHECS 2025)

Designing AI/ML enabled wireless communication systems while meeting regulation requirements

In conjunction with IEEE Globecom, 8 - 12 December 2025, Taipei, Taiwan

The rise of Artificial Intelligence (AI) and Machine Learning is a game change on almost every level of industry. The field of wireless communications, and specifically the evolution of cellular mobile communications towards its 6th Generation as currently under definition in the 3rd Generation Partnership Project (3GPP), is no different and multiple strategies are currently being investigated on how to take advantage of this technology. Initial targets include the optimization of Multiple-Input-Multiple-Output (MIMO) processing, advanced localization techniques, improved Channel-State-Information (CSI) feed-back management and others. Besides specific technical optimizations, the arrival of AI/ML questions the basic design approach of wireless communication systems and may require rethinking the overall approach to architecture for exploiting AI/ML principles within the network itself and externally, through so-called AI-as-a-Service (AIaaS) based solutions. Besides the technical challenges, Government Agencies around the world are starting to regulate the usage of AI/ML technology; examples include the US White House Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, the European Artificial Intelligence Act, the South Korean Artificial Intelligence Basic Law, etc. It indeed needs to be understood which constrains such regulations put onto the design of Communications Systems and which solutions need to be implemented in order to achieve compliance. Related solutions may be designed for optimized operation in central or distributed processing units or the edge.

The scope of this workshop is to explore this twofold role of the technical exploitation of AI/ML technology in wireless communications systems and the management of the related regulation framework arising around the world. Contributions are sought for on all levels of abstractions, including innovative architectural approaches, the usage of AI/ML principles to further optimize existing processing paradigms and pushing the boundaries of efficiency, solutions supporting regulation requirements of Government administrations and other.

Topics of interest include, but are not limited to:

- Architectural solutions integrating AI/ML in central, distributed or edge processing
- Efficient and effective network architectures for learning and inference
- AI/ML in 6th Generation Cellular Mobile Communications Networks
- AI/ML in Radio Local Area Networks (RLAN)
- AI/ML for cross-layer edge resource management and orchestration
- AI/ML for improving physical layer processing of communication systems
- Distributed intelligence and federated learning for optimization of communications networks
- Modeling and performance analysis for communications learning systems Energy efficiency considerations related to AI/ML solutions Architectural and other solutions meeting Government Regulation requirements
- Generative AI applied to wireless communications
- Semantic and Goal-oriented communications in the context of AI/ML enabled wireless communications
- Semantic coding and signal processing
- Advanced AI/ML for semantic communications – Reinforcement Learning, Federated Learning, Split Learning, in-device learning, collaborative inference, etc.
- Testbeds and performance evaluation of AI/ML-enabled wireless networks

Important dates

Papers submission: 15/07/2025
Acceptance notification: 01/09/2025
Camera ready: 01/10/2025
Workshop: TBD (08/12/2025 or 12/12/2025)

Organizing committee

General chairs

- Dr. Emilio Calvanese Strinati, CEA-Leti (France)
- Dr. Markus Dominik Mueck, Intel Deutschland GmbH (Germany)

Technical Program Chairs

- Prof. Matti Latva-aho, Univ. of Oulu (Finland)
- Dr. Markus Dominik Mueck, Intel (Germany)
- Prof. Seong-Lyun Kim, Yonsei Univ. (Republic of Korea)

Steering committee:

- Dr. Vincenzo Sciancalepore, NEC (Germany)
- Dr. Paolo Di Lorenzo, Sapienza University of Rome (Italy)
- Prof. Eryk Dutkiewicz, University of Technology, Sydney (Australia)

Technical Program Committee

Jinho Choi, Adelaide Univ. (Australia)
Seung-Woo Ko, Inha Univ. (Korea)
Jeonghun Park, Yonsei Univ. (Korea)
Joongheon Kim, Korea Univ. (Korea)
Jaehoon Chung, LG Electronics, Inc. (Korea)
Taesang Choi, ETRI (Korea)
Premanandana Rajatheva, Univ. of Oulu (Finland)
Nicolas Cassiau, CEA-Leti (Grenoble)
Alexis Dowhuszko, Aalto Univ. (Finland)
Riku Jäntti, Aalto Univ. (Finland)
Zoran Utkovski, Fraunhofer HHI (Germany)
Pierre Dal Zotto, Grenoble Ecole de Management (France)
Davide Montagno Bozzone, Hewlett Packard Ent. (Italy)
Louis-Adrien Dufrène, Orange (France)
Quentin Lampin, Orange (France)
Guillaume Larue, Orange (France)
Matti Latva-aho, Univ. of Oulu (Finland)
Dileepa Marasinghe, Univ. of Oulu (Finland).

For regular updates, visit the 6GARROW webpage at: https://6garrow.com/