

The *ITU Journal on Future and Evolving Technologies (ITU J-FET)* is an international journal providing complete coverage of all communications and networking paradigms, free of charge for both readers and authors. The ITU Journal considers yet-to-be-published papers addressing fundamental and applied research. It shares new techniques and concepts, analyses and tutorials, as well as learning from experiments and physical and simulated testbeds. It also discusses the implications of the latest research results for policy and regulation, legal frameworks, the economy and society. This publication builds bridges between disciplines, connects theory with application, and stimulates international dialogue. Its interdisciplinary approach reflects ITU's comprehensive field of interest and explores the convergence of ICT with other disciplines. The ITU Journal welcomes submissions at any time, and on any topic within its scope.



4th special issue on



AI and machine learning solutions in 5G and future networks

Call for papers

The 2023 ITU AI/ML in 5G Challenge (fourth edition) provides a collaborative platform for addressing challenges in the application of Artificial Intelligence (AI)/ Machine Learning (ML) in emerging communication networks, including 5G and the forthcoming 6G. Participants, including students and professionals from over 100 countries, engage with industry and academia to tackle real-world problems using AI/ML in communication networks.

Since 2020, the ITU AI/ML in 5G Challenge offers carefully curated problem statements, a mix of real-world and simulated data, and mentoring including technical webinars and hands-on sessions. Teams participating in the Challenge enable, create, train, validate, and apply ML models for communication networks. This enables participants to not only showcase their talent, test their concepts on real data and real-world problems, and compete for global recognition including prize money and certificates, but also enter the world of ITU standards by mapping their solutions to ITU specifications.

Following the successful publication of three special issues on theme of AI and ML in 5G and future networks, the ITU Journal on Future and Evolving Technologies (ITU J-FET) is launching a new call for papers focused on research related to problem statements of the fourth edition of the Challenge. Therefore, we invite researchers to submit their works for consideration in this special issue of the ITU Journal. The invitation targets hosts and participants of the Challenge, and contributions based on novel research with clearly explained and strongly aligned topics in the challenge are also welcome. This dedicated edition aims to explore the impact of AI and ML in 5G/6G and future networks, along with the enabling technologies and tools within network infrastructures.

Suggested topics

- Application of AI/ML in future networks, including 5G/6G
- AI/ML for wireless communications system design in future networks, including 5G/6G
- AI/ML for energy-efficient operations in future networks, including AI for modelling and optimization
- Fault analysis and management in network operation and maintenance
- AI/ML for network security including Software Defined Networking (SDN)
- Advances in AI/ML for signal processing in future networks, including 5G/6G
- Application of AI/ML in resource constrained environments and other domains
- AI/ML for the verification of software and hardware in future networks, including 5G/6G
- AI/ML in support of standard comprehension, creation and use in future networks, including 5G/6G

Keywords

5G, beyond 5G, 6G, artificial intelligence, energy consumption, wireless communication systems, machine learning, deep learning

Deadlines extended

Paper submission: **29 February 2024**

Paper acceptance notification: 30 May 2024

Camera-ready paper submission: 30 June 2024

Paper submission

This special issue calls for original scientific papers. Submitted papers should not be under consideration for publication elsewhere. Submissions must be made electronically using [ScholarOne Manuscripts](#). Templates and guidelines can be found at <https://www.itu.int/en/journal/j-fet/Pages/submission-guidelines.aspx>.

Publication

Papers will be published in the ITU digital library.

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