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.

Special issue on

Intelligent technologies for future networking and distributed systems

Call for papers

Computer networks and distributed systems have been evolving quickly over the decades, mainly caused by the onset of the Internet. In recent years, the most significant advances in these areas have been due to the introduction of intelligent systems relying on data mining, machine learning, deep learning or computational intelligence techniques. The use of artificial intelligence in the Internet infrastructure and applications has become widespread, representing both a potential and a challenge for this area. From programmable data planes at the very bottom of the networking stack to applications such as online social networks, intelligent techniques have influenced how researchers understand the challenges and bridge the gap to provide adequate solutions for them. Machine/deep learning techniques are at the core of solutions for 5G/6G networks, IoT and fog/edge computing, network management, security, privacy and blockchain solutions, network softwarization and virtualization, smart applications (cities, agriculture, industry, healthcare), social networking and vehicular/robotic/drones networking.

On the other hand, adopting complex and computationally intensive intelligent techniques has frequently been the first alternative, ignoring old or new solutions that are simpler in concept, design, implementation and operation. These days, not using any sort of artificial intelligence technique in a study may appear as a demerit for the proposal. This misconception is not only deleterious to the evolution of networking and distributed systems, blocking potential contributions to the generation of knowledge beyond the current state of the art, but also goes against the scientific method's core beliefs.

Therefore, this special issue seeks contributions that propose and evaluate intelligent techniques for networking and distributed systems, as well as encouraging a thorough discussion of the advantages and disadvantages of these solutions, addressing the trade-offs involved in their adoption.

Suggested topics (but not limited to):	
Wireless and mobile networks	• 5G/6G networks and applications • Mobile computing
Network softwarization and virtualization	• Software defined networking • Network functions virtualization • Programmable data planes (P4) • Network virtualization
Internet of Things	• Internet of Things and cyber-physical systems • Urban computing • Smart applications (cities, agriculture, healthcare, industry, homes, smart grid) • Fog/edge computing
Social networking	• Social network analysis
Management and performance	• Network management, operation, and analysis • Network measurement and monitoring • Performance, scalability and reliability • QoS and QoE
Distributed data models	• Data models and architecture for big data • Big data, data analysis and data mining
Security	• Security for networks and distributed systems • Blockchain and distributed ledger technologies
Ad hoc networks	• Vehicular networks • Drone networks • Robotic networks • Nano-networks

Keywords
5G/6G networks, big data, artificial intelligence, Internet, machine learning

Deadlines extended
Paper submission: 31 October 2023
Paper acceptance notification: 23 March 2024
Camera-ready paper submission: 23 April 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 EDAS: Editor's Assistant at https://edas.info/N30395. 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.

Editor-in-Chief
Ian F. Akyildiz, Truva Inc., United States (ian.akyildiz@itu.int)

Leading Guest Editor
Eduardo Cerqueira, Federal University of Pará, Brazil

Guest Editors
- Carlos Kamienski, Federal University of ABC, Brazil
- Dave Cavalcanti, Intel Corporation, USA
- Marco Di Felice, University of Bologna, Italy
- Stenio Fernandes, Bank of Canada, Canada

Editorial Board
The list of the Editors is available at https://www.itu.int/en/journal/j-fet/Pages/editorial- board.aspx

Additional information
Please visit the ITU Journal website at https://www.itu.int/en/journal/j-fet/Pages/default.aspx Inquiries should be addressed to Alessia Magliarditi at journal@itu.int