

Call for Papers
Special Issue on Intelligent Computing in Next Generation Networks

Intelligent computing (IC) is based on the synergistic combination of advances in Internet of Things (IoT), Crowdsensing technologies, Big Data analytics, Mobile and Cloud Computing, Artificial Intelligence (AI), and Smart Cyber-Physical Systems. In recent years, AI and IoT are both accomplishing enormous technological advances, thus giving rise to phenomenon referred as Artificial Intelligence in Internet of Things (AIoT). Such as the eXplainable Artificial Intelligence (XAI) and Federated Learning (FL), newly refined AI paradigms, developed upon distributed data environment to train and test smart devices, and empowers edge layer devices to collectively train and modernize the mutual learning model with unlimited potential of securing sensitive data and heterogeneity.

Artificial intelligence (AI) and Internet of Things (IoT) are two advancing techniques in sensor-based applications. These two technologies include many areas of application such as smart healthcare, smart cities, smart transportation and smart environments. Nowadays there has been tremendous growth in dual applications of AI and IoT especially in networking and data processing/delivery paradigms which is readily available with its intelligent devices and easily accessible to the users and customizable for the operating the functionalities. Edge/cloud computing is another emerging method for processing information. The main advantages of this combinatorial technologies include minimal human efforts, affordable resource utilization, adoption of intelligent application, sensor based data collection. AIoT technology has certain enviable power in terms of cost and energy efficient information processing, and shows great promises of extremely enhanced data security and protection when enabled in Next Generation Networking (NGN) including 5G/6G and beyond. By equipping smart communication and computing processing, IC in NGN environment brings the opportunity to utilize exponentially growing data and handle unresolved technical shortcomings of intelligent networking applications. Therefore, by synergizing AI and IoT with NGN will bring innovation and transform the intelligent networking services and applications in various domains. It will revolutionize the industry 4.0, smart healthcare, smart banking, social computing, energy trading, and cyber-physical smart sensing systems. The integration and unification of these technologies are relatively understudied area of research; therefore, this special issue aims to collect recent advances and rapidly evolving state-of-the-art approaches on AIoT based applications focused on Wireless Communication and Mobile Computing issues. The objective is to broaden the understanding of several aspects of IC in NGN.

Researchers, developers, and industry experts are welcome to contribute to one of the following topics or slightly similar ones:

- AI in large-scale of IoT
- AI in autonomous vehicular networks
- Integration of AI and IoT in Beyond 5G and 6G network architectures
- AIoT with lightweight computation
- Tools for Performance Evaluation, Compilation, and Debugging
- Custom Computing Architectures
- Graphical user interfaces with statistical power
- Big Data based Cloud Programming
- AIoT -based service and applications for vehicular clouds
- AI for future internet architectures

- Scalable AIoT for intelligent networking services
- Applications of AIoT in large-scale intelligent networking services
- AI for emerging networks
- Algorithm based Computing
- Cloud Computing and Unsupervised Applications
- AI for NGN
- AI for IoT healthcare systems
- Security aspects for machine learning in AIoT and NGN
- XAI framework in IoT and NGN
- Computational paradigms and computational complexity in AIoT
- Cloud Programming and AIoT
- AIoT and image processing
- Computer networks and image, video processing
- Cloud Data mining and robot intelligence
- Cloud Intelligence agents and robotics
- Machine learning and pattern recognition
- Tools for Performance Evaluation, Compilation, and Debugging
- Graphical user interfaces with statistical power
- Big Data based Cloud/edge Programming
- Algorithm based Computing
- Cloud Computing and Unsupervised Applications

Important Dates:

Submission deadline: 20 March 2024
 First round of revision: 20 May 2024
 Revised version submission: 10 June 2024
 Final Decision: 31 July 2024

The correspondence with ROMJIST including the paper submission will be carried out using the address romjist@nano-link.net respecting the instructions for authors specific to ROMJIST posted at

<https://www.romjist.ro/info-for-authors.html>

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Editors Bio:

Prof. Dr. Fadi Al-Turjman received his Ph.D. in computer science from Queen's University, Canada, in 2011. He is the associate dean for research and the founding director of the International Research Center for AI and IoT at Near East University, Nicosia, Cyprus. Prof. Al-Turjman is the head of Artificial Intelligence Engineering Department, and a leading authority in the areas of smart/intelligent

IoT systems, wireless, and mobile networks' architectures, protocols, deployments, and performance evaluation in Artificial Intelligence of Things (AIoT). His publication history spans over 400 SCI/E publications, in addition to numerous keynotes and plenary talks at flagship venues. He has authored and edited more than 40 books about cognition, security, and wireless sensor networks' deployments in smart IoT environments, which have been published by well-reputed publishers such as Taylor and Francis, Elsevier, IET, and Springer. He has received several recognitions and best papers' awards at top international conferences. He also received the prestigious Best Research Paper Award from Elsevier Computer Communications Journal for the period 2015-2018, in addition to the Top Researcher Award for 2018 at Antalya Bilim University, Turkey. Prof. Al-Turjman has led a number of international symposia and workshops in flagship communication society conferences. Currently, he serves as book series editor and the lead guest/associate editor for several top tier journals, including IEEE Communications Surveys and Tutorials (IF 23.9) and Elsevier Sustainable Cities and Society (IF 7.58), in addition to organizing international conferences and symposiums on the most up to date research topics in AI and IoT.

Prof. Dr. Walaa Hamouda received the M.A.Sc. and Ph.D. degrees in electrical and computer engineering from Queen's University, Kingston, ON, Canada, in 1998 and 2002, respectively. Since 2002, he has been with the Department of Electrical and Computer Engineering, Concordia University, Montreal, QC, Canada, where he is currently a Professor. Since 2006, he has been Concordia University Research Chair in communications and networking. His current research interests include single/multiuser multiple-input multiple-output communications, space-time processing, cooperative communications, wireless networks, multiuser communications, cross-layer design, and source and channel coding. He was a recipient of numerous awards, including the best paper awards of the IEEE WCNC'16, ICC 2009, and the IEEE Canada Certificate of Appreciation in 2007 and 2008. He served and is serving as the Co-Chair of the Wireless Communications and Networking Conference (WCNC,19) MAC and Cross-layer Design Track, Wireless Communications Symposium of the IEEE ICC'2018, the Co-Chair of the Ad-hoc, Sensor, and Mesh Networking Symposium of the IEEE Globecom Conference 2017, the Technical Co-Chair of the Fifth International Conference on Selected Topics in Mobile and Wireless Networking (MoWNet'2016), the Track Co-Chair of the Multiple Antenna and Cooperative Communications and IEEE Vehicular Technology Conference (VTC-Fall'16), the Co-Chair of the ACM Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks (ACMPE-WASUN'2014) 2014, the Technical Co-Chair of the Wireless Networks Symposium, 2012 Global Communications Conference, the Ad hoc, Sensor, and Mesh Networking Symposium of the 2010 ICC, and the 25th Queen's Biennial Symposium on Communications. He also served as the Track Co-Chair of the Radio Access Techniques of the 2006 IEEE VTC Fall 2006 and the Transmission Techniques of the IEEE VTC-Fall 2012. From 2005 to 2008, he was the Chair of the IEEE Montreal Chapter in Communications and Information Theory. He served as an Associate Editor for IEEE Communications Letters and IET Wireless Sensor Systems and currently serves as an Associate Editor for IEEE Transactions on Vehicular Technology, the IEEE Transactions on Signal Processing, IEEE Communications Surveys and Tutorials, and IEEE Wireless Communications Letters.