

5G Edge computing enabled Internet of Medical Things

Theme: With the growth of 5G and edge computing, the healthcare technologies are drifted away from the local clinics to monitor the patients remotely who need it utmost especially in pandemic scenario. The edge computing architecture makes the generation of data easier and its consumption by the Internet of Medical Things (IoMT) like physician's notebooks, nurses' smartphones, sensor-based patient-monitoring tools and other healthcare technologies. Numerous developments in forthcoming accessibility for more remote healthcare facilities has been increased with 5G edge computing. Advanced Artificial Intelligence technologies has also accelerated the growth in various the applications like safety of patients, management of chronic diseases, safety of drug supply chain and so on. On the patient safety and monitoring front, cameras and sensors can inform risk management strategies by tracking compliance with hospital sanitation policies and generating data that is easy to process and analyze. The sensors and devices that facilitate the continuous patient monitoring could alert providers of clinically meaningful changes and opportunities for early interventions. Those same sensors could be used to reduce risks in the drug supply chain, alerting managers to issues such as temperature changes in vaccines during transportation. The IoMT has brought together the people (patients, clinicians, caregivers); processes (patient care and support); enablers (mobile applications and connected medical devices) and data (patient performance and data) for delivering outcome of patients effectively and efficiently. IoMT has infused the 5G edge computing high-speed wireless technologies of medical care like with connected solutions for real time remote monitoring and analysis. With this, IoMT is capable of improving the patient's outcomes by boosting accessibility, empowering the patients to take control of their health, driving efficiencies and streamlines communication, preventing the spread of disease with solutions for in-home care, allowing for convenience and bringing expertise to remote areas, enhancing collaboration across healthcare teams and providing more holistic view to providers. Another promising frontier is where AI and edge computing intersect is Edge AI. Edge AI shifts AI-enabled decision-making closer to where data resides by enabling the devices to process data faster than centralized IoMT models can, facilitating more automated, real time, and secure user experience for patients and healthcare providers. Healthcare 5.0 is a boon in the medical domain as it provides various functions, such as remotely monitoring of the patient health, reducing the inventory to store the patient data digitally, and providing awareness about the next stage of diseases, as well as providing automated detection and diagnosis of diseases from the multi-modality images, controlling complex surgeries and analyzing the patient data for effective diagnosis and treatment. Now a days, IoMT is a growing trend for the potential delivery of fast and precise medical services. Various body sensors in IoT-based systems are integrated with AI, cloud computing, machine learning, and wearable devices for providing promising solutions in healthcare. However, IoT in healthcare faces various challenging issues including scarcity of accurate and cost-effective smart healthcare sensors; the trust concerns related to the security and privacy of healthcare data; scarcity of interoperability and uniform standards across the eHealthcare appliances; heterogeneous and multi-dimensional healthcare data. 5G enabled IoMT to provide faster connectivity as compared to the traditional 4G networks. Telehealth tools with 5G and edge computing technology can also attain accessible routine checkups. Patients in rural and remote areas can connect over videos with their physicians for routine care and consultation. The IoMT enabled 5G and edge computing technology provides various services through an infrastructure of connected medical devices, software applications, and health systems. The special issue invites original research in the field of IoMT for eHealth. In this issue, a cutting-edge progression in the area of 5G edge computing enabled IoMT would be discussed by introducing efficient and innovative solutions. Further, future directions of research and developments in Healthcare 5.0 would be considered to handle the various issues and challenges in this field.

This special section will focus on (but not limited to) the following topics:

- Digital revolution in IoMT
- Smart IoMT sensing technologies
- AI-based computing techniques in 5G enabled IoMT
- IoMT based standards and emerging technologies
- Management of IoMT devices
- Smart monitoring of wearables IoMT devices
- 5G edge computing enabled medical technologies
- Analytics in Medical Imaging
- Safety, management of data in IoMT
- Data processing, its privacy and retrieval in IoMT
- Big Data mining and Analytics in Medical domain
- Data automation, optimization and Transmission in IoMT
- Energy efficient technologies for IoMT
- 5G edge based medical image analysis
- IoMT Communication Technologies
- IoMT Security
- Machine learning for patient's data processing
- New data collection schemes and enhanced monitoring for IoMT
- Voice assistant IoMT
- Real time monitoring and analysis of patient health in IoMT
- Applications of 5G edge computing enabled IoMT devices



Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Informatics <http://www.ieee-ies.org/pubs/transactions-on-industrial-informatics> . Please submit your manuscript in electronic form through Manuscript Central web site: <https://mc.manuscriptcentral.com/tii> . On the submitting page #1 in popup menu of manuscript type, select: SS on **5G Edge computing enabled Internet of Medical Things**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable:	Deadline for manuscript submissions	October 30, 2021
	Expected publication date (tentative)	June 2022

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