



The performance, capacity, and efficacy of consumer healthcare services have all benefited by turning artificial intelligence (AI) research into clinically validated applications. Although substantial studies have been conducted globally, only a few AI-based solutions have reached consumer healthcare facilities. Non-standardized medical records, a lack of curated datasets, and strict legal and ethical guidelines to protect patient privacy are major obstacles to the general adoption of clinically verified AI applications. Therefore, it is imperative to devise innovative data-sharing techniques in the era of AI that protect patient privacy while creating consumer healthcare apps based on AI. These exceptionally infectious and irresistible sicknesses require an early forecast of episodes by figuring out a powerful framework to anticipate the course of an illness and devise distinctive administration techniques.

Edge computing is widely used to lower latency, increase availability, and save bandwidth for real-time diagnosis services. The security and privacy of medical data are eventually compromised by data-driven machine learning, which necessitates creating a diagnostic model using a massive quantity of medical data. AI and edge intelligence are the two significant innovations recognized as the likely competitors to foresee the episode of illnesses. The AI and edge intelligence procedures have been settling some drawn-out complex issues. These strategies can give a top-to-bottom comprehension of the diseases and their effect on the general public. In light of existing information and expressive forecasts, an extra cautious examination could be exceptionally important for dynamic and future strategy setting. Non-standardized medical records, a lack of curated datasets, and strict legal and ethical guidelines to protect patient privacy are major obstacles to the general adoption of clinically verified AI applications. Therefore, it is imperative to devise innovative data-sharing techniques in the era of AI that protect patient privacy while creating consumer healthcare apps based on AI. Creating privacy-preserving methods and resolving the problems preventing AI deployment in a real consumer healthcare setting have received much attention in the literature.

#### TOPICS OF INTEREST

This special issue aims to discover the promises of privacy-preserving based edge intelligence consumer healthcare systems and come across innovative solutions for useful insights with thriving results. In addition, the objectives include offering informative investigation and effective techniques that can support tracking and predicting the diseases, preclude the epidemic from further spread, and efficient resource utilization to improve the results and control the consequences. The topics covered include but are not limited to:

- AI-assisted edge cloud systems for healthcare systems
- AI-based anomaly detection in smart healthcare system
- Applications of privacy-preserving AI systems
- Architectures and algorithms for industrial and safety applications, run on private edge systems for healthcare systems
- Architectures for edge intelligence for healthcare systems
- Differential privacy: theory and application for healthcare system
- Distributed privacy-preserving algorithms for healthcare system
- Machine learning and federated learning for secure and privacy-preserving healthcare systems
- Privacy-preserving data integration and aggregation-based edge intelligence
- Security and privacy aspects of edge computing systems for healthcare systems
- Testbeds, experimental trials, and results from prototypical implementations of private edge computing systems

#### AUTHOR GUIDELINES

IEEE Consumer Electronics Magazine (CEM<sup>1</sup>) publishes peer-reviewed articles that present emerging trends, key insights, tutorials, practical experiences, design, and industry-related research & developments of mainstream consumer electronic products, technologies, and related fields of interest to the membership of the IEEE Consumer Technology Society (CTSoc) and broad engineering audience. CEM aims to educate and entertain on general topics related to consumer technologies and electronic products. Submissions must follow IEEE CEM Template available in IEEE Template Selector<sup>2</sup>, or the LaTeX template is also available on Overleaf<sup>3</sup>, and should consist of the followings: (i) A manuscript of minimum 6-page length (overlength page charges are listed below): A PDF of the complete manuscript layout with figures, tables placed within the text, and (ii) Source files: Text should be provided separately from photos and graphics and may be in LaTeX or Word format. High-resolution original photos and graphics (300 dpi) are required for the final submission. Images embedded in Word or Excel documents are not suitable; however, figures and graphics may be provided in a PowerPoint slide deck, with one figure/graphic per slide. The authors must own the copyright on any images, photographs or graphics or have obtained explicit permission for use of all such material when a third party owns the copyright. Alternatively, copyleft images and materials may be used once the relevant license terms are complied with, including citations to the original source/author. It is the responsibility of the author(s) to demonstrate such compliance and document the corresponding license agreements (a URL is sufficient) in notes accompanying the submitted article. The authors should include a PDF file with a suggested layout of the article. Figure captions must be provided and ideally figures/graphics should be cited in the text of the article. An IEEE copyright form will be required.

The manuscripts must be submitted online to the 'Edge Intelligence for Security and Privacy in Consumer Healthcare Systems' track using the IEEE CEM's IEEE Author Portal<sup>4</sup>. The IEEE Author Portal will automate the generation of a single submission document if the authors have the correct files prepared in advance.

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