Special_Session_Healthcare Optimization 2025

Special Session on Next-Generation AI-Driven Optimization in Healthcare and Hospital Logistics: Insights from Metaheuristics, Machine Learning, and IoT

at the **2nd IEEE Afro-Mediterranean Conference on Artificial Intelligence** (**2025 IEEE AMCAI**)
Valenciennes, France, October 14-16, 2025
Conference website: https://amcai-atia.tn/

Special Session Organizers

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Objectives and topics

The rapid evolution of artificial intelligence and connected technologies is revolutionizing the healthcare landscape. This session aims to delve into innovative AI-driven methodologies that optimize healthcare delivery and operations. By leveraging metaheuristics, advanced machine learning techniques, and Internet of Things (IoT) solutions, we can address challenges in patient care, resource allocation, and overall system efficiency.

This special session aims to showcase cutting-edge research by presenting the latest advancements and case studies that highlight how AI techniques are transforming healthcare, from diagnostics to treatment optimization. It seeks to

integrate diverse approaches by exploring the synergistic effects of metaheuristics, machine learning, and IoT, demonstrating how these technologies collectively contribute to smarter and more adaptive healthcare systems. Additionally, the session will foster interdisciplinary collaboration, facilitating dialogue between researchers, clinicians, and industry professionals to bridge the gap between theoretical innovations and real-world applications. Lastly, it will address real-world challenges by discussing ethical considerations, data privacy concerns, and regulatory issues related to AI and IoT deployment in healthcare, ensuring that these technological advancements are both effective and responsible.

The scope of the Special_Session_Healthcare Optimization 2025 includes, but is not limited to the following topics:

- Application of metaheuristic algorithms for resource optimization in healthcare settings

- Metaheuristic and IA approaches integration for planning optimization

- IoT-based solutions for patient monitoring, smart hospitals, and remote healthcare management

- Blockchain for Secure and Efficient Hospital Supply Chain Management

- AI-powered Waste Management in Healthcare Facilities

- Integration of AI tools to enhance healthcare workflow efficiency and decision support systems

- Case studies on successful implementations of AI technologies in healthcare environments

- Ethical, legal, and regulatory implications of AI and IoT in the medical field

Important dates

Paper Submission deadline: April 15, 2025
Authors Notification: June 15, 2025
Camera Ready and Registration: July 05, 2025
Conference date: October 14-16, 2025

Program Committee (to be invited)

Patrick Hircsh, The University of Natural Resources and Life Sciences, Austria
Jean-François Condotta, University of Artois, France
Takwa Tlili, University of Manouba, Tunisia
Hajer Ben Romdhane, University of Tunis, Tunisia

Submission

All contributions should be original and not published elsewhere or intended to be published during the review period. The contributions should address research questions that relate to one of the topics listed above.

Authors are invited to submit their papers electronically in pdf format, through EasyChair at https://easychair.org/conferences/?conf=amcai2025 . All the special sessions are centralized as tracks in the same conference management system as the regular papers. Therefore, to submit a paper please activate the following link and select the track: **Special_Session_ Healthcare Optimization 2025:** Special Session on Next-Generation AI Solutions for Healthcare Optimization: Insights from Metaheuristics, Machine

Learning, and IoT

Manuscripts should be prepared in 10-point font using the IEEE 8.5" x 11" two-column conference format https://www.ieee.org/conferences/publishing/templates.html

Submitted regular papers are written in English, between 6 to 8 pages (including all figures, tables, and references).

Submissions not following these guidelines may be rejected without review. Also, submissions received after the due date, exceeding the length limit, or not appropriately structured may also not be considered.

To ensure high quality, all submissions are blind peer-reviewed by at least three reviewers from the **Special_Session_Healthcare Optimization 2025 Program Committee**.

All accepted papers must be presented by one of the authors who must register for the conference and pay the fee.

All accepted and presented papers will be submitted to IEEE Xplore for inclusion.