

# Call for Papers

## Artificial Intelligence and UAV Powered Smart Health Workshop *The 19<sup>th</sup> International Conference on Wireless Communications and Mobile Computing* *IWCMC 2024*

**Website:** <https://iwcmc.org/2024/index.php>

**Workshop:** <https://iwcmc.org/2024/Workshops.php>

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27–31 May 2024: Ayia Napa | Adams Beach Hotel, Cyprus

### Chairs:

Khalid Abualsaud, Qatar University, Qatar

Ala Gousssem, University of Doha for Science and Technology, Qatar

Elias Yaacoub, Qatar University, Qatar

Tamer Khattab, Qatar University, Qatar

### Scope and Topics of the Workshop

Overall, continuous innovations in artificial intelligence (AI) play a powerful role in the applications realm, influencing the lives of millions through health, safety, education, and other opportunities that can be shared across all sectors of society. In the healthcare field, artificial intelligence is a paradigm transformation supported by the increasing accessibility of structured and unstructured health data and the quick improvement of big data analysis methods. This health data is often present in the form of demographics, medical notes, electronic recordings from medical devices (sensors), physical inspections, clinical laboratories, and photographs. In the near future, we will see that it is difficult to imagine a visit to a doctor or a stay in a hospital that does not integrate AI in different ways. It has become a transformative force as the fear that AI will replace doctors and physicians is gradually dispelling.

On the other hand, unmanned aerial vehicles (UAVs), or drones are improving healthcare systems, including the safe and rapid delivery of blood and medical products. Manufacturers have expert knowledge of the opportunities and challenges of these healthcare drones that can maintain saving lives and help improve resources. However, many research questions remain unanswered in terms of capacity and latency limitations, deployment and architecture, spectrum sharing strategies, antenna design, and the role of AI in improving the integrated terrestrial and non-terrestrial cellular networks in the future.

Accordingly, AI allows people to grow extraordinary insights into disease diagnosis based on histopathological examination or medical imaging, detection of malignancies from images of skin lesions, detection of distortions on radiological images, etc. In addition, AI helps in discovering new drugs, finding variety of

treatments and patient consequences, as well as guiding researchers on how to set up groups for costly clinical trials.

Moreover, due to the unprecedented previous pandemic situation worldwide, society has witnessed many recent and major breakthroughs in healthcare and medicine, where AI-based technologies have been greatly favored to speed up the vaccine design and production cycle as well as the application of effective social distancing measures and other preventive measures. The ultimate goal of AI in healthcare is to re-humanize medicine by providing a set of tools for health experts so that they can focus more on patient care by enabling the 4P model of medicine (**p**redictive, **p**reventive, **p**ersonalized, and **p**articipatory) and thus patient independence. This workshop invites papers on AI, machine learning (ML) or deep learning (DL)-based, possibly UAV-assisted, in healthcare ongoing progress and interconnected development to impact human health through healthcare systems, industry, technology, and ethical issues.

## Workshop Topics

Accepted papers will be published in the IEEE IWCMC 2024 proceedings and will be submitted to the IEEE digital library (IEEE Xplore). Authors are welcome to submit papers with topics that include, but are not limited to the following:

- AI for edge/cloud health data processing
- AI for medical imaging applications
- Clinical decision support system using AI
- AI pandemic control and modeling applications
- AI tools for telemedicine applications
- AI/IoT for remote health monitoring
- AI for Ambient Assisted Living (AAL)
- AI for health security and privacy
- Federated Learning for privacy in healthcare applications
- AI/Blockchain for healthcare applications
- AI and Natural Language Processing (NLP) for understanding clinical documentation
- AI for Internet of Nano-things
- AI for precision medicine
- AI for clinical and genomic diagnostics
- AI for DNA sequencing
- AI for CRISPR gene editing
- AI for supporting digital-twin health applications
- Explainable AI for healthcare applications
- AI systems in healthcare: Ethical, legal, and social issues
- Mitigating bias in AI healthcare systems
- UAVs for medicine and medical equipment delivery

- UAVs for collecting sensitive biological samples (supporting remote clinics, preventing pandemic spread)
- UAVs for pandemic tracking (e.g. crowd control in affected areas, readings collection)
- UAVs for remote healthcare imaging

Submitted papers are encouraged to address novel technical challenges or industrial and standard aspects of the key technologies for AI in healthcare.

## **Important Dates**

*Deadlines are the same as the main conference dates.*

## **Submission Guidelines**

Prospective authors are invited to submit original technical papers — up to 6 pages of length, using the EDAS link: <https://edas.info/newPaper.php?c=31475> for possible publication in the IWCMC 2024 – Conference Proceedings, which will be submitted to the IEEEXplore. For more information, visit: <https://iwcmc.org/2024/index.php>

Note: Within this workshop, there will be one Best Paper Award.