

Joint ICTP-IAEA Workshop on Artificial Intelligence in Ionizing Radiation for Medical Physicists

20 - 24 November 2023
An ICTP - IAEA Meeting
Trieste, Italy



Further information:
<http://indico.ictp.it/event/10229/>
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The workshop is designed for medical physicists having interest in expanding their knowledge and skills to implement AI-based tools. It will provide a contemporary overview of the field and introduce to medical physicists theoretical principles which are considered fundamental for a safe and conscious implementation of AI-based technologies in radiation medicine.

Description:

This comprehensive workshop will provide participants with a theoretical foundation in the most important research and technological development areas of AI-based tools in radiation medicine. The workshop will introduce to medical physicists examples of AI-based tools in radiation medicine practice and relevant theoretical foundations, and will discuss technical, ethical, and legal challenges associated with clinical implementation of AI-based tools that should be carefully considered to ensure that quality of patient care and patient safety are not compromised. Given the roles and responsibilities of medical physicists in the technical supervision of radiation medicine equipment, it is imperative to contextualize and extend these responsibilities to the implementation, risk mitigation, and quality assurance of AI-based tools in radiation medicine. This workshop will introduce to medical physicists the theoretical knowledge and skills necessary to implement AI-based tools safely and securely, emphasizing the need for continued education and training in this emerging field.

Topics:

The Workshop is aimed at providing medical physicist with relevant knowledge to support departments in deploying and using AI based tools, including:

- General overview of the field:
 - Insight into current AI-based tools in radiation medicine;
 - Roles and responsibilities of clinically qualified medical physicists in AI-based clinical applications;
 - Requirements for education and training;
 - Implementation considerations, risks, and quality assurance;
- Theoretical principles of AI from the user's perspective:
 - Neural networks;
 - Machine learning;
 - Deep learning;
 - Data management;
- Hands-on training.

Prerequisites:

The target audience are early and mid-career clinically qualified medical physicists (CQMPs, as per IAEA Publication Human Health Series No. 25) from United Nations, UNESCO or IAEA Member States holding a postgraduate-level university degree in medical physics and working in hospitals in either in radiotherapy, nuclear medicine or diagnostic radiology. Although the workshop is not intended for developers of AI-based tools, basic computational programming, data management and fundamental statistics skills are considered as assets.

How to apply:

Online application:
<http://indico.ictp.it/event/10229/>

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Directors:

O. CIRAJ-BJELAC, IAEA, Austria
E. TITOVICH, IAEA, Austria

Local Organiser:

R. PADOVANI, ICTP, Italy

Deadline:

15 July 2023



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