

## Margarita Kirienko

### Short Biography:

Margarita Kirienko, since 2020, works as Nuclear Medicine physician at the National Cancer Institute in Milan, Italy (Fondazione IRCCS Istituto Nazionale Tumori). She holds a medical degree from the University of Milan; she completed her nuclear medicine training at University Milan-Bicocca, and she completed her PhD (focused on radiomics approach and artificial intelligence) at Humanitas University, Milan, Italy. Her expertise provides a strong footing in research methodology, AI applications in medical imaging, and radiopharmaceuticals' applications for diagnostic and therapeutic purposes in oncological diseases. She is an editorial board member of the European Journal of Nuclear Medicine and Molecular Imaging and of the European Radiology. She authored more than 50 scientific papers (ORCID 0000-0002-3923-1151) and actively participated in national and international conferences.

### Abstract:

The past few decades have witnessed remarkable advancements in information technology and its integration into the field of medicine. The emergence of artificial intelligence (AI) has introduced a new challenge and opportunity in the practice of medicine.

Nuclear medicine is undergoing significant changes to improve image quality and achieve more accurate and precise quantification, especially in the era of precision medicine, notably in the realm of theranostics. Nuclear medicine has always embraced technological progress, and AI is no exception.

The application of AI to nuclear medicine presents both challenges and opportunities. AI technology holds the potential to enhance clinical outcomes in both diagnostic and therapeutic aspects of nuclear medicine. Promising opportunities for AI in clinical nuclear medicine include brain imaging, oncological imaging, infection and inflammation detection, and cardiovascular diseases. AI-based image analysis can identify complex imaging patterns to support diagnosis, while AI applications may facilitate dosimetry in the clinical setting. Predictive modeling using AI can assist in treatment planning. This presentation will highlight the most recent advances in this field.