Special Issue

Artificial Intelligence in Pediatric Imaging: Current Capabilities and Future Directions

Message from the Guest Editor

Artificial intelligence is rapidly reshaping pediatric imaging, building on advances in deep learning, radiomics, and automated volumetric tools to improve diagnosis, risk stratification, and longitudinal brain development assessment in children. The historical arc from handcrafted features to multimodal, data-driven radiogenomic models has created noninvasive links between imaging phenotypes and molecular or genetic signatures. This Special Issue aims to showcase translational AI that advances pediatric neuroimaging and oncologic imaging. It emphasizes explainability and promotes robust clinical validation and governance for child-specific tools. We welcome cutting-edge work on brain age and developmental–trajectory models, radiogenomics, multimodal MRI–genetic integration, foundation or transfer-learning approaches, and explainable AI methods with clinical evaluation. Original research, technical notes, large curated pediatric datasets, clinical validation studies, systematic reviews, and ethics/governance analyses are welcome.

Guest Editor

Dr. Mohammad Arafat Hussain
Boston Children's Hospital, Harvard Medical School, Boston, MA 02115, USA

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Children
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
children@mdpi.com

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Message from the Editor-in-Chief

You are invited to contribute a research article or comprehensive review for consideration and publication in *Children* (ISSN 2227-9067). *Children* is an open access journal—research articles, reviews, and other content are published online immediately after acceptance. The scientific community and the general public have unlimited free access to the content as soon as it is published. The journal focuses on sharing clinical, epidemiological, and translational science relevant to children's health. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Paul R. Carney
Departments of Child Health and Neurology, University of Missouri, 400 Keene Street, Columbia, MO 65211, USA

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