Special Issue

Advances in Medical 3D Vision: Voxels and Beyond

Message from the Guest Editors

Three-dimensional medical imaging, including computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET) imaging, play a crucial role in healthcare, serving as "first-class citizens" in medical decision-making. These imaging modalities also include high-level shape and topological representations, which are critical for understanding anatomical structures and disease processes. In recent years, the analysis of medical 3D data has significantly benefited from advances in artificial intelligence, creating a field known as "**Medical 3D Vision**". This Special Issue will explore cutting-edge methods and applications of medical 3D data analysis, ranging from traditional voxel-based techniques for standard 3D medical images to approaches leveraging other geometric representations, such as point clouds, meshes, graphs, and implicit functions. By bringing together innovative research, we will bridge technical advancements and clinical applications, fostering a deeper understanding of how AI-driven 3D analysis can revolutionize diagnostics, intervention planning, and patient outcomes.

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