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Supervision for Improved Skin Lesion Classification using Deep Learning -- Predicting Osteoarthritis of the Temporomandibular Joint Using Random Forest with Privileged Information -- Hybrid Network Based on Cross-modal Feature Fusion for Diagnosis of Alzheimer's Disease -- Topological Data Analysis for Biomedical Imaging -- Future Unruptured Intracranial Aneurysm Growth Prediction using Mesh Convolutional Neural Networks -- TDA-Clustering Strategies for the Characterization of Brain Organoids -- Fetal Cortex Segmentation with Topology and Thickness Loss Constraints.

Sommario/riassunto

This book constitutes the refereed joint proceedings of the 1st International Workshop on Ethical & Philosophical Issues in Medical Imaging (EPIMI 2022); the 12th International Workshop on Multimodal Learning and Fusion Across Scales for Clinical Decision Support (ML-CDS 2022) and the 2nd International Workshop on Topological Data Analysis for Biomedical Imaging (TDA4BiomedicalImaging 2022), held in conjunction with the 25th International Conference on Medical Imaging and Computer-Assisted Intervention, MICCAI 2022, in Singapore, in September 2022. EPIMI includes five short papers about various humanistic aspects of medical image computing and computer-assisted interventions. The ML-CDS papers discuss machine learning on multimodal data sets for clinical decision support and treatment planning. The TDA papers focus on Topological Data Analysis: a collection of techniques and tools that have matured from an increasing interest in the role topologyplays in machine learning and data science.