

1. Record Nr.	UNISA996490353303316
Titolo	Medical image learning with limited and noisy data : first international workshop, MILLanD 2022, held in conjunction with MICCAI 2022, Singapore, September 22, 2022, proceedings / / edited by Ghada Zamzmi [and five others]
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	3-031-16760-0
Descrizione fisica	1 online resource (243 pages)
Collana	Lecture Notes in Computer Science Ser. ; ; v.13559
Disciplina	733
Soggetti	Deep learning (Machine learning)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Efficient and Robust Annotation Strategies -- Heatmap Regression for Lesion Detection Using Pointwise Annotations -- 1 Introduction -- 2 Related Work -- 3 Method -- 3.1 Training via Heatmap Regression -- 3.2 Detection During Inference -- 3.3 Segmentation Transfer Learning -- 4 Experiments and Results -- 4.1 Experimental Setup -- 4.2 Lesion Detection Results -- 4.3 Lesion Segmentation via Transfer Learning -- 5 Discussion and Conclusion -- References -- Partial Annotations for the Segmentation of Large Structures with Low Annotation Cost -- 1 Introduction -- 2 Method -- 2.1 Selective Dice Loss -- 2.2 Optimization -- 3 Experimental Results -- 4 Conclusion -- References -- Abstraction in Pixel-wise Noisy Annotations Can Guide Attention to Improve Prostate Cancer Grade Assessment -- 1 Introduction -- 2 Materials and Method -- 2.1 Data -- 2.2 Architecture -- 2.3 Multiple Instance Learning for Cancer Grade Assessment -- 2.4 Noisy Labels and Weak Supervision -- 3 Experiments -- 3.1 Implementation and Evaluation -- 3.2 Results -- 4 Conclusion -- References -- Meta Pixel Loss Correction for Medical Image Segmentation with Noisy Labels -- 1 Introduction -- 2 Methodology -- 2.1 Meta Pixel Loss Correction -- 2.2 Optimization Algorithm -- 3 Experiment Results -- 3.1 Dataset -- 3.2 Experiment Setting -- 3.3 Experimental Results -- 3.4 Limitation -- 4

Conclusion -- References -- Re-thinking and Re-labeling LIDC-IDRI for Robust Pulmonary Cancer Prediction -- 1 Introduction -- 2 Materials -- 3 Study Design -- 4 Methods -- 4.1 Label Induction Using Machine Annotator -- 4.2 Similar Nodule Retrieval Using Metric Learning -- 5 Experiments and Results -- 5.1 Implementation -- 5.2 Quantitative Evaluation -- 5.3 Discussion -- 6 Conclusion and Future Work -- References.

Weakly-Supervised, Self-supervised, and Contrastive Learning -- Universal Lesion Detection and Classification Using Limited Data and Weakly-Supervised Self-training -- 1 Introduction -- 2 Methods -- 3 Experiments and Results -- 4 Discussion and Conclusion -- References -- BoxShrink: From Bounding Boxes to Segmentation Masks -- 1 Introduction -- 2 Related Work -- 3 Boxshrink Framework -- 3.1 Main Components -- 3.2 rapid-BoxShrink -- 3.3 robust-BoxShrink -- 4 Experiments -- 4.1 Qualitative and Quantitative Experiments -- 4.2 Reproducibility Details -- 5 Discussion -- 6 Conclusion -- References -- Multi-Feature Vision Transformer via Self-Supervised Representation Learning for Improvement of COVID-19 Diagnosis -- 1 Introduction -- 2 Methods -- 3 Experiments and Results -- 4 Conclusion -- References -- SB-SSL: Slice-Based Self-supervised Transformers for Knee Abnormality Classification from MRI -- 1 Introduction -- 2 Related Works -- 3 Methodology -- 3.1 Vision Transformer -- 3.2 Self-supervised Pretraining -- 4 Experimental Results -- 4.1 Implementation Details -- 4.2 Results -- 4.3 Ablation Studies -- 5 Conclusion -- References -- Optimizing Transformations for Contrastive Learning in a Differentiable Framework -- 1 Introduction -- 2 Transformation Network -- 2.1 Optimizing Transformations -- 2.2 Differentiable Formulation of the Transformations -- 2.3 Experimental Settings -- 2.4 Linear Evaluation -- 3 Results and Discussion -- 4 Conclusions and Perspectives -- References -- Stain Based Contrastive Co-training for Histopathological Image Analysis -- 1 Introduction -- 2 Stain Based Contrastive Co-training -- 2.1 Stain Separation -- 2.2 Contrastive Co-training -- 3 Experiments -- 3.1 Datasets -- 3.2 Model Selection, Training and Hyperparameters -- 3.3 Results -- 3.4 Co-training View Analysis -- 3.5 Ablation Studies -- 4 Conclusion -- References.

Active and Continual Learning -- .26em plus .1em minus .  
1emCLINICAL: Targeted Active Learning for Imbalanced Medical Image Classification -- 1 Introduction -- 1.1 Related Work -- 1.2 Our Contributions -- 2 Preliminaries -- 2.1 Examples of Smi Functions -- 3 Clinical: Our Targeted Active Learning Framework for Binary and Long-Tail Imbalance -- 4 Experiments -- 4.1 Binary Imbalance -- 4.2 Long-Tail Imbalance -- 5 Conclusion -- References -- Real Time Data Augmentation Using Fractional Linear Transformations in Continual Learning -- 1 Introduction -- 2 Methodology -- 3 Experiments, Results and Discussion -- 4 Conclusion -- References -- DIAGNOSE: Avoiding Out-of-Distribution Data Using Submodular Information Measures -- 1 Introduction -- 1.1 Problem Statement: OOD Scenarios in Medical Data -- 1.2 Related Work -- 1.3 Our Contributions -- 2 Preliminaries -- 3 Leveraging Submodular Information Measures for Multiple Out-of-Distribution Scenarios -- 4 Experimental Results -- 4.1 Scenario A - Unrelated Images -- 4.2 Scenario B - Incorrectly Acquired Images -- 4.3 Scenario C - Mixed View Images -- 5 Conclusion -- References -- Transfer Representation Learning -- Auto-segmentation of Hip Joints Using MultiPlanar UNet with Transfer Learning -- 1 Introduction -- 2 Method -- 3 Data and Experiments -- 4 Results -- 4.1 Numerical Validation and Ablation Study -- 5 Conclusion -- References -- Asymmetry and Architectural Distortion Detection with Limited

Mammography Data -- 1 Introduction -- 2 Related Work -- 3 Method  
-- 4 Experiment Design -- 5 Experimental Results -- 5.1 Comparison  
with Other Methods -- 5.2 Ablation Study -- 6 Conclusions --  
References -- Imbalanced Data and Out-of-Distribution Generalization  
-- Class Imbalance Correction for Improved Universal Lesion Detection  
and Tagging in CT -- 1 Introduction -- 2 Methods -- 3 Experiments.  
4 Results and Discussion -- 5 Conclusion -- References -- CVAD: An  
Anomaly Detector for Medical Images Based on Cascade VAE -- 1  
Introduction -- 2 Method -- 2.1 CVAD Architecture -- 2.2 Combined  
Loss Function -- 2.3 Network Details -- 3 Experiments -- 3.1 Datasets  
and Implementation Details -- 3.2 Results -- 4 Conclusion --  
References -- Approaches for Noisy, Missing, and Low Quality Data --  
Visual Field Prediction with Missing and Noisy Data Based on Distance-  
Based Loss -- 1 Introduction -- 2 Method -- 2.1 Distance-Based Loss  
-- 3 Experiments -- 3.1 Dataset and Implementation -- 3.2 Results --  
4 Conclusion -- References -- Image Quality Classification  
for Automated Visual Evaluation of Cervical Precancer -- 1 Introduction  
-- 2 Image Quality Labeling Criteria and Data -- 2.1 The Labeling  
Criteria -- 2.2 Datasets -- 3 Methods -- 3.1 Cervix Detection -- 3.2  
Quality Classification -- 3.3 Mislabel Identification -- 4 Experimental  
Results and Discussion -- 5 Conclusions -- Appendix -- References --  
A Monotonicity Constrained Attention Module for Emotion  
Classification with Limited EEG Data -- 1 Introduction -- 2 Related  
Work -- 3 Proposed Method -- 4 Experiments -- 4.1 Models' Scalp  
Attention Pattern -- 4.2 Models' Sensitivity of Prediction on Inputs'  
Frequency -- 4.3 Model Sensitivity on Morphisms Between Samples --  
5 Conclusion -- References -- Automated Skin Biopsy Analysis with  
Limited Data -- 1 Introduction -- 2 Methods -- 2.1 Dataset -- 2.2  
Nerve Labeling -- 2.3 Dermis-Epidermis Boundary Detection -- 2.4  
Nerve Crossing Identification -- 3 Experimental Setup -- 3.1 Evaluating  
the Nerve Tracing Model -- 3.2 Evaluating Dermis Model -- 4 Results  
-- 4.1 Nerve Labeling Results -- 4.2 Dermis Labeling Results -- 4.3  
Crossing Count Results -- 5 Discussion -- References -- Author Index.

---