Whole-Slide Mitosis Detection in H&E Breast Hist Train Distilled Stain-Invariant Convolutional Networks

IEEE Transactions on Medical Imaging 37, 2126-2136 DOI: 10.1109/tmi.2018.2820199

Citation Report

#	ARTICLE	IF	CITATIONS
1	Staining Invariant Features for Improving Generalization of Deep Convolutional Neural Networks in Computational Pathology. Frontiers in Bioengineering and Biotechnology, 2019, 7, 198.	2.0	47
2	Contextual Classification of Tumor Growth Patterns in Digital Histology Slides. Advances in Intelligent Systems and Computing, 2019, , 13-25.	0.5	1
3	Computational pathology definitions, best practices, and recommendations for regulatory guidance: a white paper from the Digital Pathology Association. Journal of Pathology, 2019, 249, 286-294.	2.1	263
4	No pixel-level annotations needed. Nature Biomedical Engineering, 2019, 3, 855-856.	11.6	14
5	Strategies to Reduce the Expert Supervision Required for Deep Learning-Based Segmentation of Histopathological Images. Frontiers in Medicine, 2019, 6, 222.	1.2	19
6	Learning Domain-Invariant Representations of Histological Images. Frontiers in Medicine, 2019, 6, 162.	1.2	29
7	Strategies for Training Stain Invariant CNNS. , 2019, , .		10
8	Deep Learning–Based Histopathologic Assessment of Kidney Tissue. Journal of the American Society of Nephrology: JASN, 2019, 30, 1968-1979.	3.0	226
9	Quantifying the effects of data augmentation and stain color normalization in convolutional neural networks for computational pathology. Medical Image Analysis, 2019, 58, 101544.	7.0	311
10	Head and Neck Cancer Detection in Digitized Whole-Slide Histology Using Convolutional Neural Networks. Scientific Reports, 2019, 9, 14043.	1.6	66
11	Deep learning assisted mitotic counting for breast cancer. Laboratory Investigation, 2019, 99, 1596-1606.	1.7	69
12	Cell-Net: Embryonic Cell Counting and Centroid Localization via Residual Incremental Atrous Pyramid and Progressive Upsampling Convolution. IEEE Access, 2019, 7, 81945-81955.	2.6	24
13	Deep learning and manual assessment show that the absolute mitotic count does not contain prognostic information in triple negative breast cancer. Cellular Oncology (Dordrecht), 2019, 42, 555-569.	2.1	16
14	Predicting breast tumor proliferation from whole-slide images: The TUPAC16 challenge. Medical Image Analysis, 2019, 54, 111-121.	7.0	182
15	Deep Learning in Image Cytometry: A Review. Cytometry Part A: the Journal of the International Society for Analytical Cytology, 2019, 95, 366-380.	1.1	145
16	Artificial intelligence in digital breast pathology: Techniques and applications. Breast, 2020, 49, 267-273.	0.9	117
17	Artificial intelligence in pathology: an overview. Diagnostic Histopathology, 2020, 26, 513-520.	0.2	21
18	Evaluation of the Use of Combined Artificial Intelligence and Pathologist Assessment to Review and Grade Prostate Biopsies. JAMA Network Open, 2020, 3, e2023267.	2.8	56

#	Article	IF	CITATIONS
19	Weakly-Supervised Classification of HER2 Expression in Breast Cancer Haematoxylin and Eosin Stained Slides. Applied Sciences (Switzerland), 2020, 10, 4728.	1.3	12
20	Automatic detection of squamous cell carcinoma metastasis in esophageal lymph nodes using semantic segmentation. Clinical and Translational Medicine, 2020, 10, e129.	1.7	14
21	Data Augmentation for Histopathological Images Based on Gaussian-Laplacian Pyramid Blending. , 2020, , .		7
22	Objective Diagnosis for Histopathological Images Based on Machine Learning Techniques: Classical Approaches and New Trends. Mathematics, 2020, 8, 1863.	1.1	16
23	Integration of geoscience frameworks into digital pathology analysis permits quantification of microarchitectural relationships in histological landscapes. Scientific Reports, 2020, 10, 17572.	1.6	5
24	Piloting a Deep Learning Model for Predicting Nuclear BAP1 Immunohistochemical Expression of Uveal Melanoma from Hematoxylin-and-Eosin Sections. Translational Vision Science and Technology, 2020, 9, 50.	1.1	26
25	Impact of rescanning and normalization on convolutional neural network performance in multi-center, whole-slide classification of prostate cancer. Scientific Reports, 2020, 10, 14398.	1.6	40
26	Report on computational assessment of Tumor Infiltrating Lymphocytes from the International Immuno-Oncology Biomarker Working Group. Npj Breast Cancer, 2020, 6, 16.	2.3	90
27	Virtual Staining for Mitosis Detection in Breast Histopathology. , 2020, , .		16
28	Melanoma Prognosis: Accuracy of the American Joint Committee on Cancer Staging Manual Eighth Edition. Journal of the National Cancer Institute, 2020, 112, 921-928.	3.0	32
29	A machine learning algorithm for simulating immunohistochemistry: development of SOX10 virtual IHC and evaluation on primarily melanocytic neoplasms. Modern Pathology, 2020, 33, 1638-1648.	2.9	35
30	Stain Standardization Capsule for Application-Driven Histopathological Image Normalization. IEEE Journal of Biomedical and Health Informatics, 2021, 25, 337-347.	3.9	23
31	Antibody Supervised Training of a Deep Learning Based Algorithm for Leukocyte Segmentation in Papillary Thyroid Carcinoma. IEEE Journal of Biomedical and Health Informatics, 2021, 25, 422-428.	3.9	16
32	Style transfer strategy for developing a generalizable deep learning application in digital pathology. Computer Methods and Programs in Biomedicine, 2021, 198, 105815.	2.6	23
33	Deep computational pathology in breast cancer. Seminars in Cancer Biology, 2021, 72, 226-237.	4.3	30
34	Deep neural network models for computational histopathology: A survey. Medical Image Analysis, 2021, 67, 101813.	7.0	331
35	Closing the translation gap: Al applications in digital pathology. Biochimica Et Biophysica Acta: Reviews on Cancer, 2021, 1875, 188452.	3.3	31
36	HookNet: Multi-resolution convolutional neural networks for semantic segmentation in histopathology whole-slide images. Medical Image Analysis, 2021, 68, 101890.	7.0	92

#	Article	IF	CITATIONS
37	Attention-Guided Multi-Branch Convolutional Neural Network for Mitosis Detection From Histopathological Images. IEEE Journal of Biomedical and Health Informatics, 2021, 25, 358-370.	3.9	24
38	Artificial Intelligence-Based Quantification of Epithelial Proliferation in Mammary Glands of Rats and Oviducts of GA¶ttingen Minipigs. Toxicologic Pathology, 2021, 49, 912-927.	0.9	5
39	Neural Image Compression for Gigapixel Histopathology Image Analysis. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021, 43, 567-578.	9.7	125
40	Influence of Inter-Annotator Variability on Automatic Mitotic Figure Assessment. Informatik Aktuell, 2021, , 241-246.	0.4	5
41	Stain Mix-Up: Unsupervised Domain Generalization for Histopathology Images. Lecture Notes in Computer Science, 2021, , 117-126.	1.0	13
42	AIM in Surgical Pathology. , 2021, , 1-18.		0
43	HistoNet: A Deep Learning-Based Model of Normal Histology. Toxicologic Pathology, 2021, 49, 784-797.	0.9	15
44	A U-Net based framework to quantify glomerulosclerosis in digitized PAS and H&E stained human tissues. Computerized Medical Imaging and Graphics, 2021, 89, 101865.	3.5	18
45	Dual-path network with synergistic grouping loss and evidence driven risk stratification for whole slide cervical image analysis. Medical Image Analysis, 2021, 69, 101955.	7.0	28
46	A deep learning approach for mitosis detection: Application in tumor proliferation prediction from whole slide images. Artificial Intelligence in Medicine, 2021, 114, 102048.	3.8	21
47	Spatio-Temporal Mitosis Detection in Time-Lapse Phase-Contrast Microscopy Image Sequences: A Benchmark. IEEE Transactions on Medical Imaging, 2021, 40, 1319-1328.	5.4	16
48	Mitosis detection techniques in H&E stained breast cancer pathological images: A comprehensive review. Computers and Electrical Engineering, 2021, 91, 107038.	3.0	25
49	Multi-level colonoscopy malignant tissue detection with adversarial CAC-UNet. Neurocomputing, 2021, 438, 165-183.	3.5	20
50	Deep learning in histopathology: the path to the clinic. Nature Medicine, 2021, 27, 775-784.	15.2	355
51	Residual cyclegan for robust domain transformation of histopathological tissue slides. Medical Image Analysis, 2021, 70, 102004.	7.0	48
53	Automated Quantification of sTIL Density with H&E-Based Digital Image Analysis Has Prognostic Potential in Triple-Negative Breast Cancers. Cancers, 2021, 13, 3050.	1.7	21
54	Tissue Multiplex Analyte Detection in Anatomic Pathology – Pathways to Clinical Implementation. Frontiers in Molecular Biosciences, 2021, 8, 672531.	1.6	20
55	Prototype transfer generative adversarial network for unsupervised breast cancer histology image classification. Biomedical Signal Processing and Control, 2021, 68, 102713.	3.5	8

#	Article	IF	CITATIONS
56	The impact of site-specific digital histology signatures on deep learning model accuracy and bias. Nature Communications, 2021, 12, 4423.	5.8	111
57	Artificial intelligence in computational pathology – challenges and future directions. , 2021, 119, 103196.		25
58	Mitotic nuclei analysis in breast cancer histopathology images using deep ensemble classifier. Medical Image Analysis, 2021, 72, 102121.	7.0	37
59	Domain Adaptation-Based Deep Learning for Automated Tumor Cell (TC) Scoring and Survival Analysis on PD-L1 Stained Tissue Images. IEEE Transactions on Medical Imaging, 2021, 40, 2513-2523.	5.4	13
60	Deep learning-based virtual cytokeratin staining of gastric carcinomas to measure tumor–stroma ratio. Scientific Reports, 2021, 11, 19255.	1.6	10
61	Explainable nucleus classification using Decision Tree Approximation of Learned Embeddings. Bioinformatics, 2022, 38, 513-519.	1.8	7
62	Towards histopathological stain invariance by Unsupervised Domain Augmentation using generative adversarial networks. Neurocomputing, 2021, 460, 277-291.	3.5	21
63	Semi-HIC: A novel semi-supervised deep learning method for histopathological image classification. Computers in Biology and Medicine, 2021, 137, 104788.	3.9	15
64	Robust Slide Cartography in Colon Cancer Histology. Informatik Aktuell, 2021, , 229-234.	0.4	1
65	DeepHistoClass: A Novel Strategy for Confident Classification of Immunohistochemistry Images Using Deep Learning. Molecular and Cellular Proteomics, 2021, 20, 100140.	2.5	11
66	Leveraging Unlabeled Whole-Slide-Images for Mitosis Detection. Lecture Notes in Computer Science, 2018, , 69-77.	1.0	14
68	Multimarginal Wasserstein Barycenter for Stain Normalization and Augmentation. Lecture Notes in Computer Science, 2020, 12265, 362-371.	1.0	12
69	Are Pathologist-Defined Labels Reproducible? Comparison of the TUPAC16 Mitotic Figure Dataset with an Alternative Set of Labels. Lecture Notes in Computer Science, 2020, , 204-213.	1.0	13
70	Effectiveness of transfer learning for enhancing tumor classification with a convolutional neural network on frozen sections. Scientific Reports, 2020, 10, 21899.	1.6	42
72	Developing a Qualification and Verification Strategy for Digital Tissue Image Analysis in Toxicological Pathology. Toxicologic Pathology, 2021, 49, 773-783.	0.9	12
73	Mitotic Figures—Normal, Atypical, and Imposters: A Guide to Identification. Veterinary Pathology, 2021, 58, 243-257.	0.8	22
74	A Pyramid Architecture-Based Deep Learning Framework for Breast Cancer Detection. BioMed Research International, 2021, 2021, 1-10.	0.9	11
75	Improvement of Mitosis Detection Through the Combination of PHH3 and HE Features. Lecture Notes in Computer Science, 2019, , 144-152.	1.0	Ο

# 78	ARTICLE On Transferability of Histological Tissue Labels in Computational Pathology. Lecture Notes in Computer Science, 2020, , 453-469.	IF 1.0	CITATIONS 5
79	A Brief Review of Computer-aided Whole-slide Image Detection Techniques. , 2020, , .		0
80	Deep Learning Methods for Mitosis Detection in Breast Cancer Histopathological Images: A Comprehensive Review. Lecture Notes in Computer Science, 2020, , 279-306.	1.0	3
81	Expectations of Artificial Intelligence for Pathology. Lecture Notes in Computer Science, 2020, , 1-15.	1.0	3
82	Iterative Cross-Scanner Registration for Whole Slide Images. , 2021, , .		1
83	Artificial intelligence applied to breast pathology. Virchows Archiv Fur Pathologische Anatomie Und Physiologie Und Fur Klinische Medizin, 2022, 480, 191-209.	1.4	29
84	Highly accurate differentiation of bone marrow cell morphologies using deep neural networks on a large image data set. Blood, 2021, 138, 1917-1927.	0.6	62
85	Dual-Stage Domain Adaptive Mitosis Detection for Histopathology Images. , 2020, , .		1
86	A Partial Label-Based Machine Learning Approach For Cervical Whole-Slide Image Classification: The Winning TissueNet Solution. , 2021, 2021, 2127-2131.		2
87	Rheumatoid Arthritis Synovial Inflammation Quantification Using Computer Vision. ACR Open Rheumatology, 2022, 4, 322-331.	0.9	4
88	Automated Grading of Breast Cancer Histopathology Images Using Multilayered Autoencoder. Computers, Materials and Continua, 2022, 71, 3407-3423.	1.5	0
89	A comprehensive review of computer-aided whole-slide image analysis: from datasets to feature extraction, segmentation, classification and detection approaches. Artificial Intelligence Review, 2022, 55, 4809-4878.	9.7	77
90	Computer-Aided Assessment of Melanocytic Lesions by Means of a Mitosis Algorithm. Diagnostics, 2022, 12, 436.	1.3	6
91	Computer-assisted mitotic count using a deep learning–based algorithm improves interobserver reproducibility and accuracy. Veterinary Pathology, 2022, 59, 211-226.	0.8	18
92	AIM in Surgical Pathology. , 2022, , 521-538.		0
93	MitoDet: Simple andÂRobust Mitosis Detection. Lecture Notes in Computer Science, 2022, , 53-57.	1.0	0
94	Domain Adaptive Box-Supervised Instance Segmentation Network for Mitosis Detection. IEEE Transactions on Medical Imaging, 2022, 41, 2469-2485.	5.4	6
95	Convolutional Neural Network in the Detection of Gastrointestinal Tumor and Tap. Sustainable Computing: Informatics and Systems, 2022, , 100692.	1.6	0

#	Article	IF	CITATIONS
96	Fast whole-slide cartography in colon cancer histology using superpixels and CNN classification. Journal of Medical Imaging, 2022, 9, 027501.	0.8	3
97	Bayesian K-SVD for H and E blind color deconvolution. Applications to stain normalization, data augmentation and cancer classification. Computerized Medical Imaging and Graphics, 2022, 97, 102048.	3.5	9
98	U-Net based mitosis detection from H&E-stained images with the semi-automatic annotation using pHH3 IHC-stained images. , 2022, , .		0
99	Automatic evaluation of graft orientation during Descemet membrane endothelial keratoplasty using intraoperative OCT. Biomedical Optics Express, 2022, 13, 2683.	1.5	4
100	Optimized generative adversarial network based breast cancer diagnosis with wavelet and texture features. Multimedia Systems, 0, , 1.	3.0	2
101	Breast cancer detection using artificial intelligence techniques: A systematic literature review. Artificial Intelligence in Medicine, 2022, 127, 102276.	3.8	95
102	Sparse-shot Learning with Exclusive Cross-Entropy for Extremely Many Localisations. , 2021, , .		1
103	Improve the Appreciation of Literary Works of College Students Based on Virtual Reality Technology Simulation. , 2021, , .		Ο
104	From imaging a single cell to implementing precision medicine: an exciting new era. Emerging Topics in Life Sciences, 2021, 5, 837-847.	1.1	4
105	MiNuGAN: Dual Segmentation of Mitoses and Nuclei Using Conditional GANs on Multi-center Breast H&E Images. Journal of Pathology Informatics, 2022, 13, 100002.	0.8	8
106	NuCLS: A scalable crowdsourcing approach and dataset for nucleus classification and segmentation in breast cancer. GigaScience, 2022, 11, .	3.3	33
107	The Devil is in the Details: Whole Slide Image Acquisition and Processing for Artifacts Detection, Color Variation, and Data Augmentation: A Review. IEEE Access, 2022, 10, 58821-58844.	2.6	31
108	Knowledge distillation with ensembles of convolutional neural networks for medical image segmentation. Journal of Medical Imaging, 2022, 9, .	0.8	9
110	Pathological Response and Immune Biomarker Assessment in Non-Small-Cell Lung Carcinoma Receiving Neoadjuvant Immune Checkpoint Inhibitors. Cancers, 2022, 14, 2775.	1.7	5
111	MITNET: a novel dataset and a two-stage deep learning approach for mitosis recognition in whole slide images of breast cancer tissue. Neural Computing and Applications, 2022, 34, 17837-17851.	3.2	10
113	Predicting the Likelihood of Colorectal Cancer with Artificial Intelligence Tools Using Fourier Transform Infrared Signals Obtained from Tumor Samples. Applied Spectroscopy, 2022, 76, 1412-1428.	1.2	2
114	A machine learning model for separating epithelial and stromal regions in oral cavity squamous cell carcinomas using H&E-stained histology images: A multi-center, retrospective study. Oral Oncology, 2022, 131, 105942.	0.8	6
115	Contrastive learning-based computational histopathology predict differential expression of cancer driver genes. Briefings in Bioinformatics, 2022, 23, .	3.2	8

#	Article	IF	CITATIONS
116	Colour adaptive generative networks for stain normalisation of histopathology images. Medical Image Analysis, 2022, 82, 102580.	7.0	10
117	Predicting theÂVisual Attention ofÂPathologists Evaluating Whole Slide Images ofÂCancer. Lecture Notes in Computer Science, 2022, , 11-21.	1.0	1
118	Improved Domain Generalization forÂCell Detection inÂHistopathology Images viaÂTest-Time Stain Augmentation. Lecture Notes in Computer Science, 2022, , 150-159.	1.0	3
119	Stain-AgLr: Stain Agnostic Learning forÂComputational Histopathology Using Domain Consistency andÂStain Regeneration Loss. Lecture Notes in Computer Science, 2022, , 33-44.	1.0	0
120	RandStainNA: Learning Stain-Agnostic Features fromÂHistology Slides byÂBridging Stain Augmentation andÂNormalization. Lecture Notes in Computer Science, 2022, , 212-221.	1.0	7
121	Test-Time Image-to-Image Translation Ensembling Improves Out-of-Distribution Generalization inÂHistopathology. Lecture Notes in Computer Science, 2022, , 120-129.	1.0	5
122	HE-to-PAS histological stain conversion by GAN in renal pathology. , 2022, , .		1
123	Rethinking ImageNet Pre-training for Computational Histopathology. , 2022, , .		1
124	Global Research Trends of Artificial Intelligence on Histopathological Images: A 20-Year Bibliometric Analysis. International Journal of Environmental Research and Public Health, 2022, 19, 11597.	1.2	4
125	Deep learning models for histologic grading of breast cancer and association with disease prognosis. Npj Breast Cancer, 2022, 8, .	2.3	17
126	CycleGAN for virtual stain transfer: Is seeing really believing?. Artificial Intelligence in Medicine, 2022, 133, 102420.	3.8	8
127	Computer-Assisted Annotation of Digital H&E/SOX10 Dual Stains Generates High-Performing Convolutional Neural Network for Calculating Tumor Burden in H&E-Stained Cutaneous Melanoma. International Journal of Environmental Research and Public Health, 2022, 19, 14327.	1.2	3
128	Deep learning for fully-automated nuclear pleomorphism scoring in breast cancer. Npj Breast Cancer, 2022, 8, .	2.3	6
130	A generalizable and robust deep learning algorithm for mitosis detection in multicenter breast histopathological images. Medical Image Analysis, 2023, 84, 102703.	7.0	9
131	Bias reduction in representation of histopathology images using deep feature selection. Scientific Reports, 2022, 12, .	1.6	7
132	Deep Learning for Skin Melanocytic Tumors in Whole-Slide Images: A Systematic Review. Cancers, 2023, 15, 42.	1.7	7
133	Artificial intelligence in breast cancer histopathology. Histopathology, 2023, 82, 198-210.	1.6	8
134	Deep feature based cross-slide registration. Computerized Medical Imaging and Graphics, 2022, , 102162.	3.5	1

#	Article	IF	Citations
135	A comprehensive review of the deep learning-based tumor analysis approaches in histopathological images: segmentation, classification and multi-learning tasks. Cluster Computing, 2023, 26, 3145-3185.	3.5	5
136	Al in Computational Pathology of Cancer: Improving Diagnostic Workflows and Clinical Outcomes?. Annual Review of Cancer Biology, 2023, 7, 57-71.	2.3	6
137	Deep Learning Based Methods for Breast Cancer Diagnosis: A Systematic Review and Future Direction. Diagnostics, 2023, 13, 161.	1.3	28
139	Relieving Pixel-Wise Labeling Effort forÂPathology Image Segmentation withÂSelf-training. Lecture Notes in Computer Science, 2023, , 577-592.	1.0	1
140	Unpaired virtual histological staining using prior-guided generative adversarial networks. Computerized Medical Imaging and Graphics, 2023, 105, 102185.	3.5	4
141	Generalization of vision pre-trained models for histopathology. Scientific Reports, 2023, 13, .	1.6	5
142	Applications of Artificial Intelligence in Breast Pathology. Archives of Pathology and Laboratory Medicine, 2023, 147, 1003-1013.	1.2	10
143	CCF-GNN: A Unified Model Aggregating Appearance, Microenvironment, and Topology for Pathology Image Classification. IEEE Transactions on Medical Imaging, 2023, 42, 3179-3193.	5.4	1
144	Deep learningâ€based classification and spatial prognosis risk score on wholeâ€slide images of lung adenocarcinoma. Histopathology, 0, , .	1.6	3
145	Augmenting Pathologists with NaviPath: Design and Evaluation of a Human-Al Collaborative Navigation System. , 2023, , .		4
147	Patch-based approaches to whole slide histologic grading of breast cancer using convolutional neural networks. , 2023, , 103-118.		1
148	Detecting Mitoses withÂaÂConvolutional Neural Network forÂMIDOG 2022 Challenge. Lecture Notes in Computer Science, 2023, , 211-216.	1.0	2
149	Radial Prediction Domain Adaption Classifier forÂtheÂMIDOG 2022 Challenge. Lecture Notes in Computer Science, 2023, , 206-210.	1.0	0
157	Artificial Intelligence in Breast Pathology. , 2023, , 501-510.		0
158	Artificial intelligence for digital and computational pathology. , 2023, 1, 930-949.		9
159	Synthetic Biology: Fostering the Cyber-biological Revolution. , 2023, , 196-221.		0
164	A domain-invariant feature learning framework for histopathology images. , 2023, , .		0
165	Group Distributionally Robust Knowledge Distillation. Lecture Notes in Computer Science, 2024, , 234-242.	1.0	0

#	Article	IF	CITATIONS
168	An Extensive Survey on Various Tumor Detection in Histopathological Images Using Deep Learning Techniques. , 2023, , 105-118.		0
169	A Semi-supervised Framework forÂAutomatic Pixel-Wise Breast Cancer Grading ofÂHistological Images. Lecture Notes in Electrical Engineering, 2023, , 53-65.	0.3	0
170	ALFA – Leveraging All Levels of Feature Abstraction for Enhancing the Generalization of Histopathology Image Classification Across Unseen Hospitals. , 2023, , .		0
174	Stain Normalization and Augmentation in Frequency Space for Histology Analysis. , 2023, , .		0
175	Assessing and Enhancing Robustness of Deep Learning Models with Corruption Emulation in Digital Pathology. , 2023, , .		0
183	Artificial intelligence in diagnostic and predictive pathology. , 2024, , 81-90.		0