

DAFTAR PUSTAKA

- All about biopsy accessible - ALL ABOUT BIOPSIES Edward O. Uthman, MD (utbman@riter.compute)* - Studocu (no date). Available at: <https://www.studocu.com/in/document/tamil-nadu-dr-mgr-medical-university/bachelor-of-ayurveda-and-medical-surgery/all-about-biopsy-accessible/54260992> (Accessed: 1 November 2023).
- Alom, Z. et al. (2022) 'Microscopic nuclei classification, segmentation, and detection with improved deep convolutional neural networks (DCNN)', *Diagnostic Pathology*
- Alrasheedi, F., Zhong, X. and Huang, P.-C. (2023) 'Padding Module: Learning the Padding in Deep Neural Networks', *IEEE Access*, 11, pp. 7348–7357. Available at: <https://doi.org/10.1109/ACCESS.2023.3238315>.
- Arshad, S. (2022) *Digital Pathology – A step towards better Diagnostics and Treatment, ORNet*. Available at: <https://ornet.eu/digital-pathology-a-step-towards-better-diagnostics-and-treatment/> (Accessed: 1 November 2023).
- Barat, M. et al. (2021) 'Artificial intelligence: a critical review of current applications in pancreatic imaging', *Japanese Journal of Radiology*, 39(6), pp. 514–523. Available at: <https://doi.org/10.1007/s11604-021-01098-5>.
- Bera, K. et al. (2019) 'Artificial intelligence in digital pathology - new tools for diagnosis and precision oncology', *Nature Reviews. Clinical Oncology*, 16(11), pp. 703–715. Available at: <https://doi.org/10.1038/s41571-019-0252-y>.
- Bray, F. et al. (2018) 'Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries', *CA: a cancer journal for clinicians*, 68(6), pp. 394–424. Available at: <https://doi.org/10.3322/caac.21492>.
- Breast Cancer Surgery Melbourne, VIC | Breast Surgery East Melbourne, VIC* (no date). Available at: <https://www.melbournebreastcancersurgery.com.au/> (Accessed: 31 October 2023).
- Cancer* (no date). Available at: <https://www.who.int/news-room/fact-sheets/detail/cancer> (Accessed: 26 October 2023).
- Cancer (IARC), T.I.A. for R. on (no date) *Global Cancer Observatory*. Available at: <https://gco.iarc.fr/> (Accessed: 26 October 2023).
- Chan, L. et al. (2019) 'HistoSegNet: Semantic Segmentation of Histological Tissue Type in Whole Slide Images', in. *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pp. 10662–10671. Available at: https://openaccess.thecvf.com/content_ICCV_2019/html/Chan_HistoSegNet_Semantic_Segmentation_of_Histological_Tissue_Type_in_Whole_Slide_ICCV_2019_paper.html (Accessed: 27 October 2023).
- Chen, H. et al. (2017) 'DCAN: Deep contour-aware networks for object instance

segmentation from histology images', *Medical Image Analysis*, 36, pp. 135–146. Available at: <https://doi.org/10.1016/j.media.2016.11.004>.

Connected Component Labeling: Algorithm and Python Implementation (2020) *OpenGenus IQ: Computing Expertise & Legacy*. Available at: <https://iq.opengenus.org/connected-component-labeling/> (Accessed: 4 November 2023).

Djuric, U. *et al.* (2017) 'Precision histology: how deep learning is poised to revitalize histomorphology for personalized cancer care', *npj Precision Oncology*, 1(1), pp. 1–5. Available at: <https://doi.org/10.1038/s41698-017-0022-1>.

Elgendi, M. (2020) *Deep Learning for Vision Systems*. Simon and Schuster.

Fatichah, C. *et al.* (2015) 'Nuclei segmentation of microscopic breast cancer image using Gram-Schmidt and cluster validation algorithm', in *2015 IEEE International Conference on Control System, Computing and Engineering (ICCSCE)*, pp. 236–241. Available at: <https://doi.org/10.1109/ICCSCE.2015.7482190>.

Gabril, M.Y. and Yousef, G.M. (2010) 'Informatics for practicing anatomical pathologists: marking a new era in pathology practice', *Modern Pathology: An Official Journal of the United States and Canadian Academy of Pathology, Inc*, 23(3), pp. 349–358. Available at: <https://doi.org/10.1038/modpathol.2009.190>.

Gurcan, M.N. *et al.* (2009) 'Histopathological Image Analysis: A Review', *IEEE reviews in biomedical engineering*, 2, pp. 147–171. Available at: <https://doi.org/10.1109/RBME.2009.2034865>.

Hassan, L. *et al.* (2020) 'Promising Deep Semantic Nuclei Segmentation Models for Multi-Institutional Histopathology Images of Different Organs', *International Journal of Interactive Multimedia and Artificial Intelligence*, 6, pp. 35–45. Available at: <https://doi.org/10.9781/ijimai.2020.10.004>.

He, K. *et al.* (2016) 'Deep Residual Learning for Image Recognition', in *2016 IEEE Conference on Computer Vision and Pattern Recognition (CVPR). 2016 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 770–778. Available at: <https://doi.org/10.1109/CVPR.2016.90>.

H&E Staining | The Cell (no date). Available at: <https://histologyguide.com/slideshow/MH-001-nuclear-morphology/01-slide-1.html?x=7120&y=8611&z=90.0> (Accessed: 1 November 2023).

Hsu, W.-W. *et al.* (2021) 'A Computer-Aided Diagnosis System for Breast Pathology: A Deep Learning Approach with Model Interpretability from Pathological Perspective'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2108.02656>.

Huang, P.-W. and Lai, Y.-H. (2010) 'Effective segmentation and classification for HCC biopsy images', *Pattern Recognition*, 43(4), pp. 1550–1563. Available at: <https://doi.org/10.1016/j.patcog.2009.10.014>.

- Ibrahim, A. *et al.* (2018) *Metodologi Penelitian*. Edited by I. Ismail. Samata-Gowa: Gunadarma Ilmu. Available at: <https://repository.uin-alauddin.ac.id/12366/> (Accessed: 4 November 2023).
- Janowczyk, A. and Madabhushi, A. (2016) ‘Deep learning for digital pathology image analysis: A comprehensive tutorial with selected use cases’, *Journal of Pathology Informatics*, 7, p. 29. Available at: <https://doi.org/10.4103/2153-3539.186902>.
- Kang, Q., Lao, Q. and Fevens, T. (no date) ‘Nuclei Segmentation in Histopathological Images Using Two-Stage Learning’, in *Medical Image Computing and Computer Assisted Intervention – MICCAI 2019*. Berlin, Heidelberg: Springer-Verlag, pp. 703–711. Available at: https://doi.org/10.1007/978-3-030-32239-7_78.
- Kiang, M.Y. (2003) ‘Neural Networks’, in H. Bidgoli (ed.) *Encyclopedia of Information Systems*. New York: Elsevier, pp. 303–315. Available at: <https://doi.org/10.1016/B0-12-227240-4/00121-0>.
- Kong, Y. *et al.* (2020) ‘Nuclear Segmentation in Histopathological Images Using Two-Stage Stacked U-Nets With Attention Mechanism’, *Frontiers in Bioengineering and Biotechnology*, 8, p. 1246. Available at: <https://doi.org/10.3389/fbioe.2020.573866>.
- Kovalev, V., Kalinovsky, A. and Liauchuk, V. (2016) *Deep Learning in Big Image Data: Histology Image Classification for Breast Cancer Diagnosis*.
- Kowal, M. *et al.* (2013) ‘Computer-aided diagnosis of breast cancer based on fine needle biopsy microscopic images’, *Computers in Biology and Medicine*, 43(10), pp. 1563–1572. Available at: <https://doi.org/10.1016/j.combiomed.2013.08.003>.
- Lagree, A. *et al.* (2021) ‘A review and comparison of breast tumor cell nuclei segmentation performances using deep convolutional neural networks’, *Scientific Reports*, 11(1), p. 8025. Available at: <https://doi.org/10.1038/s41598-021-87496-1>.
- Lin, T.-Y. *et al.* (2017) ‘Focal Loss for Dense Object Detection’, in *2017 IEEE International Conference on Computer Vision (ICCV). 2017 IEEE International Conference on Computer Vision (ICCV)*, Venice: IEEE, pp. 2999–3007. Available at: <https://doi.org/10.1109/ICCV.2017.324>.
- Lehtonen, O. (2021) ‘Fully Convolutional Neural Networks for Nuclei Segmentation and Type Classification’. Available at: <https://aaltodoc.aalto.fi:443/handle/123456789/108225> (Accessed: 3 November 2023).
- Macenko, M. *et al.* (2009) *A Method for Normalizing Histology Slides for Quantitative Analysis., Proceedings - 2009 IEEE International Symposium on Biomedical Imaging: From Nano to Macro, ISBI 2009*, p. 1110. Available at: <https://doi.org/10.1109/ISBI.2009.5193250>.

- Mahbod, A. *et al.* (2019) ‘A Two-Stage U-Net Algorithm for Segmentation of Nuclei in H&E-Stained Tissues’, in C.C. Reyes-Aldasoro *et al.* (eds) *Digital Pathology*. Cham: Springer International Publishing (Lecture Notes in Computer Science), pp. 75–82. Available at: https://doi.org/10.1007/978-3-030-23937-4_9.
- Mahbod, A. *et al.* (2022) ‘A dual decoder U-Net-based model for nuclei instance segmentation in hematoxylin and eosin-stained histological images’, *Frontiers in Medicine*, 9. Available at: <https://www.frontiersin.org/articles/10.3389/fmed.2022.978146> (Accessed: 26 October 2023).
- Mahbod, A. *et al.* (2023) ‘NuInsSeg: A Fully Annotated Dataset for Nuclei Instance Segmentation in H&E-Stained Histological Images’. arXiv. Available at: <https://doi.org/10.48550/arXiv.2308.01760>.
- Malhotra, P. *et al.* (2022) ‘Deep Learning-Based Computer-Aided Pneumothorax Detection Using Chest X-ray Images’, *Sensors (Basel, Switzerland)*, 22(6). Available at: <https://doi.org/10.3390/s22062278>.
- Mardiana, L. (2007) *Kanker Pada Wanita*. Niaga Swadaya.
- Müller, D., Soto-Rey, I. and Kramer, F. (2022) ‘Towards a guideline for evaluation metrics in medical image segmentation’, *BMC Research Notes*, 15(1), p. 210. Available at: <https://doi.org/10.1186/s13104-022-06096-y>.
- Nwankpa, C. *et al.* (2018) ‘Activation Functions: Comparison of trends in Practice and Research for Deep Learning’. arXiv. Available at: <https://doi.org/10.48550/arXiv.1811.03378>.
- Nam, S. *et al.* (2020) ‘Introduction to digital pathology and computer-aided pathology’, *Journal of Pathology and Translational Medicine*, 54(2), pp. 125–134. Available at: <https://doi.org/10.4132/jptm.2019.12.31>.
- Naylor, P. *et al.* (2017a) ‘Nuclei segmentation in histopathology images using deep neural networks’, in *2017 IEEE 14th International Symposium on Biomedical Imaging (ISBI 2017)*. *2017 IEEE 14th International Symposium on Biomedical Imaging (ISBI 2017)*, pp. 933–936. Available at: <https://doi.org/10.1109/ISBI.2017.7950669>.
- Naylor, P. *et al.* (2017b) ‘Nuclei segmentation in histopathology images using deep neural networks’, in *2017 IEEE 14th International Symposium on Biomedical Imaging (ISBI 2017)*, pp. 933–936. Available at: <https://doi.org/10.1109/ISBI.2017.7950669>.
- News & Blogs | Precision Oncology Ireland* (no date). Available at: <https://www.precisiononcology.ie/newsevents/blogs/items/text,502846,en.html> (Accessed: 1 November 2023).
- Prayoga, A.A. (2019) *Manajemen Kanker Payudara Komprehensif*. Surabaya: Airlangga University Press. Available at:

<https://doi.org/10.2/Manajemen%20Kanker%20Payudara%20Komprehensif.pdf>.

Qaiser, T. *et al.* (2019) ‘Fast and Accurate Tumor Segmentation of Histology Images using Persistent Homology and Deep Convolutional Features’, *Medical Image Analysis*, 55. Available at: <https://doi.org/10.1016/j.media.2019.03.014>.

Qingbo, K., Lao, Q. and Fevens, T. (2019) ‘Nuclei Segmentation in Histopathological Images Using Two-Stage Learning’, in, pp. 703–711. Available at: https://doi.org/10.1007/978-3-030-32239-7_78.

Radiuk, P. (2017) ‘Impact of Training Set Batch Size on the Performance of Convolutional Neural Networks for Diverse Datasets’, *Information Technology and Management Science*, 20, pp. 20–24. Available at: <https://doi.org/10.1515/itms-2017-0003>.

Rashmi, R. *et al.* (2020) ‘A Comparative Evaluation of Texture Features for Semantic Segmentation of Breast Histopathological Images’, *IEEE Access*, 8, pp. 64331–64346. Available at: <https://doi.org/10.1109/ACCESS.2020.2984522>.

Ronneberger, O., Fischer, P. and Brox, T. (2015) ‘U-Net: Convolutional Networks for Biomedical Image Segmentation’, in N. Navab et al. (eds) *Medical Image Computing and Computer-Assisted Intervention – MICCAI 2015*. Cham: Springer International Publishing (Lecture Notes in Computer Science), pp. 234–241. Available at: https://doi.org/10.1007/978-3-319-24574-4_28.

Sellat, Q., Bisoy, S.K. and Priyadarshini, R. (2022) ‘Chapter 10 - Semantic segmentation for self-driving cars using deep learning: a survey’, in S. Mishra et al. (eds) *Cognitive Big Data Intelligence with a Metaheuristic Approach*. Academic Press (Cognitive Data Science in Sustainable Computing), pp. 211–238. Available at: <https://doi.org/10.1016/B978-0-323-85117-6.00002-9>.

Sharma, Siddharth, Sharma, Simone and Athaiya, A. (2020) ‘ACTIVATION FUNCTIONS IN NEURAL NETWORKS’, *International Journal of Engineering Applied Sciences and Technology*, 04, pp. 310–316. Available at: <https://doi.org/10.33564/IJEAST.2020.v04i12.054>.

Shenfield, A., Kasturi, S. and Tran, W. (2022) ‘Accurate nuclei segmentation in breast cancer tumour biopsies’, in. *19th IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology*, Ottawa, ON, Canada: IEEE. Available at: <https://doi.org/10.1109/CIBCB55180.2022.9863023>.

Singh, S. (2018) *Cousins of Artificial Intelligence, Medium*. Available at: <https://towardsdatascience.com/cousins-of-artificial-intelligence-dda4edc27b55> (Accessed: 3 November 2023).

Ślądkowska, J. and Rojo, M.G. (2011) ‘Digital pathology in personalized cancer therapy’, *Folia Histochemica Et Cytobiologica*, 49(4), pp. 570–578. Available at: <https://doi.org/10.5603/fhc.2011.0080>.

Soenksen, D. (2009) ‘Advances in digital pathology drive continued momentum

and globalization', *MLO: medical laboratory observer*, 41(3), p. 31.

Srisha, R. and Khan, A. (2013) *Morphological Operations for Image Processing : Understanding and its Applications*.

Sucher, R. and Sucher, E. (2020) 'Artificial intelligence is poised to revolutionize human liver allocation and decrease medical costs associated with liver transplantation', *Hepatobiliary Surgery and Nutrition*, 9(5), pp. 679–681. Available at: <https://doi.org/10.21037/hbsn-20-458>.

Tarighat, A.P. (2021) 'Breast Tumor Segmentation using Deep Learning by U-Net Network', *Journal of Telecommunication, Electronic and Computer Engineering (JTEC)*, 13(2), pp. 49–54.

Tétu, B. and Evans, A. (2014) 'Canadian licensure for the use of digital pathology for routine diagnoses: one more step toward a new era of pathology practice without borders', *Archives of Pathology & Laboratory Medicine*, 138(3), pp. 302–304. Available at: <https://doi.org/10.5858/arpa.2013-0289-ED>.

Terven, J. et al. (2023) 'Loss Functions and Metrics in Deep Learning'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2307.02694>.

Tuwohingide, D. and Faticahah, C. (2017) 'Spatial Fuzzy C-means dan Rapid Region Merging untuk Pemisahan Sel Kanker Payudara', *Jurnal Nasional Teknik Elektro dan Teknologi Informasi (JNTETI)*, 6(1), pp. 51–57. Available at: <https://doi.org/10.22146/jnteti.v6i1.294>.

Vinet, L. and Zhedanov, A. (2011) 'A "missing" family of classical orthogonal polynomials', *Journal of Physics A: Mathematical and Theoretical*, 44(8), p. 085201. Available at: <https://doi.org/10.1088/1751-8113/44/8/085201>.

Wang, H., Li, Y. and Luo, Z. (2020) 'An Improved Breast Cancer Nuclei Segmentation Method Based on UNet++', in *Proceedings of the 2020 6th International Conference on Computing and Artificial Intelligence*. New York, NY, USA: Association for Computing Machinery (ICCAI '20), pp. 193–197. Available at: <https://doi.org/10.1145/3404555.3404577>.

Wargasetia, T.L. (2015) 'Menghadapi Era Patologi Digital: Siapkah Kita?', in *Kongres Nasional Perhimpunan Ahli Anatomi Indonesia*, Jakarta, p. 46. Available at: <https://repository.maranatha.edu/24983/> (Accessed: 1 November 2023).

Wu, Y. et al. (2022) 'Recent Advances of Deep Learning for Computational Histopathology: Principles and Applications', *Cancers*, 14(5), p. 1199. Available at: <https://doi.org/10.3390/cancers14051199>.

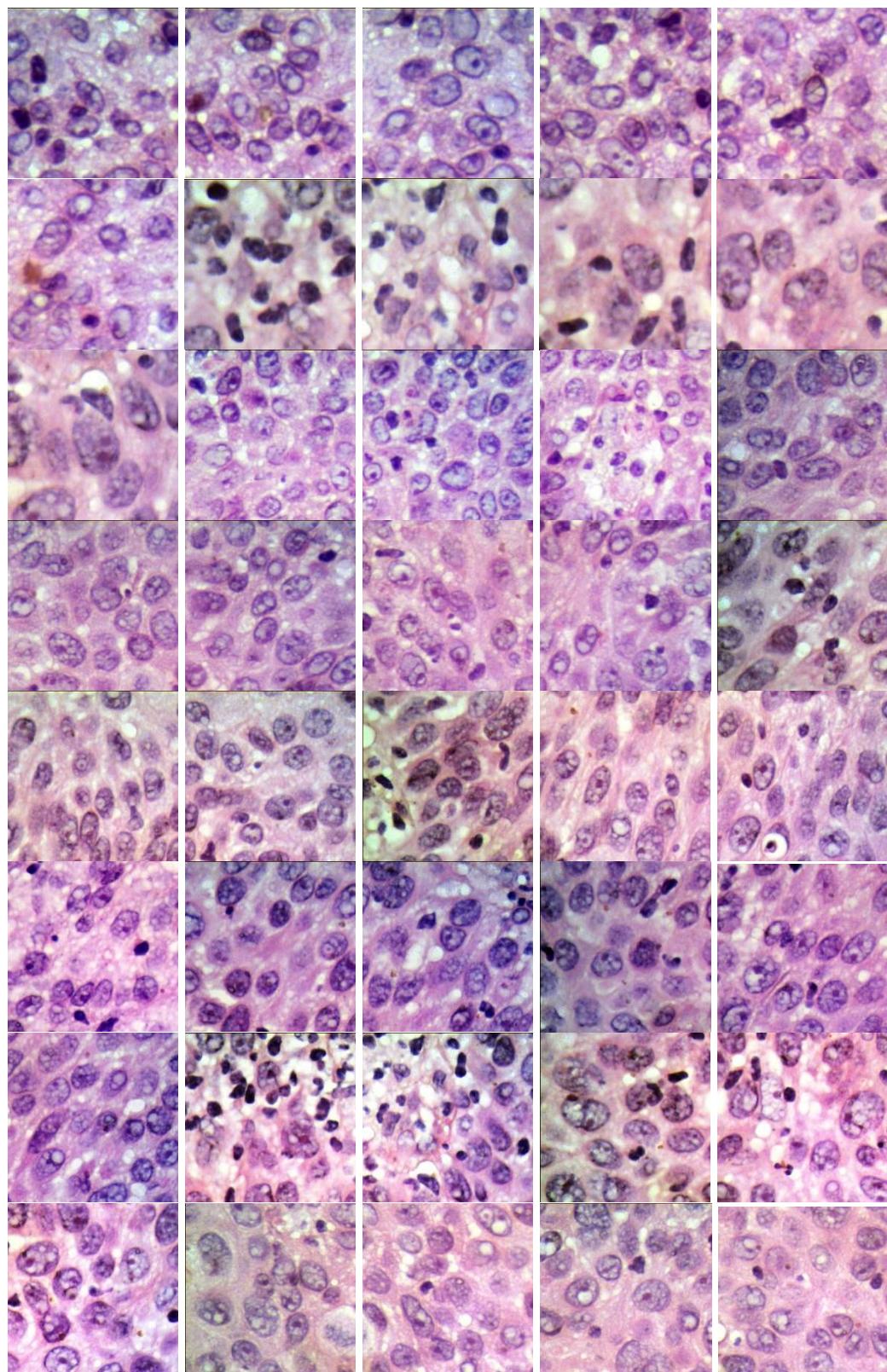
Zaniolo, L. and Marques, O. (2020) 'On the use of variable stride in convolutional neural networks', *Multimedia Tools and Applications*, 79(19), pp. 13581–13598. Available at: <https://doi.org/10.1007/s11042-019-08385-4>.

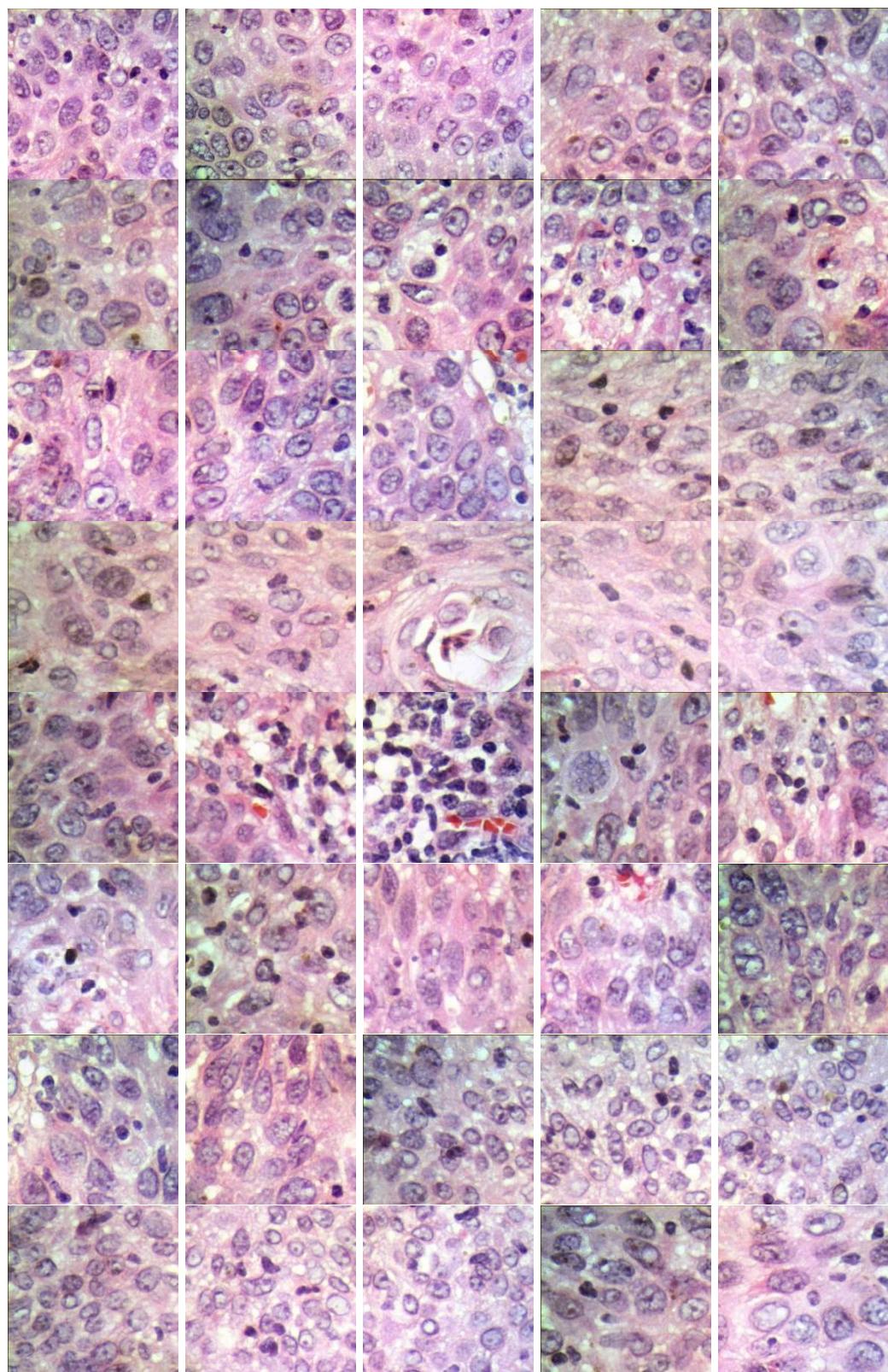
Zarbega, T.S.A. and Gültepe, Y. (2020) ‘Semantic Segmentation of Cell Nuclei in Breast Cancer using Convolutional Neural Network’, *International Journal of Computer Applications*, 176(22), pp. 1–8.

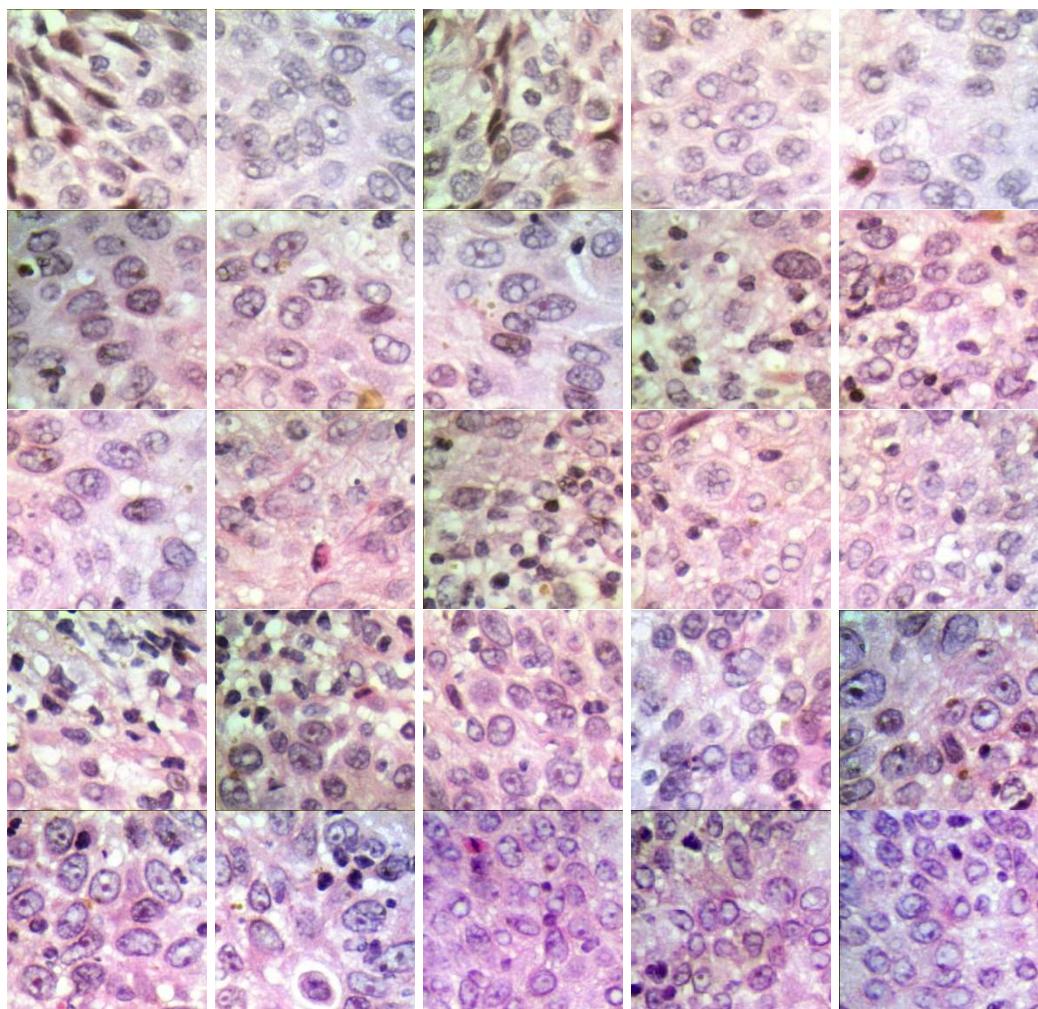
Zhang, H. *et al.* (2021) ‘MASG-GAN: A multi-view attention superpixel-guided generative adversarial network for efficient and simultaneous histopathology image segmentation and classification’, *Neurocomputing*, 463, pp. 275–291. Available at: <https://doi.org/10.1016/j.neucom.2021.08.039>.

Zulkoni, A. (2010) *Parasitologi*. Nuha Medika.

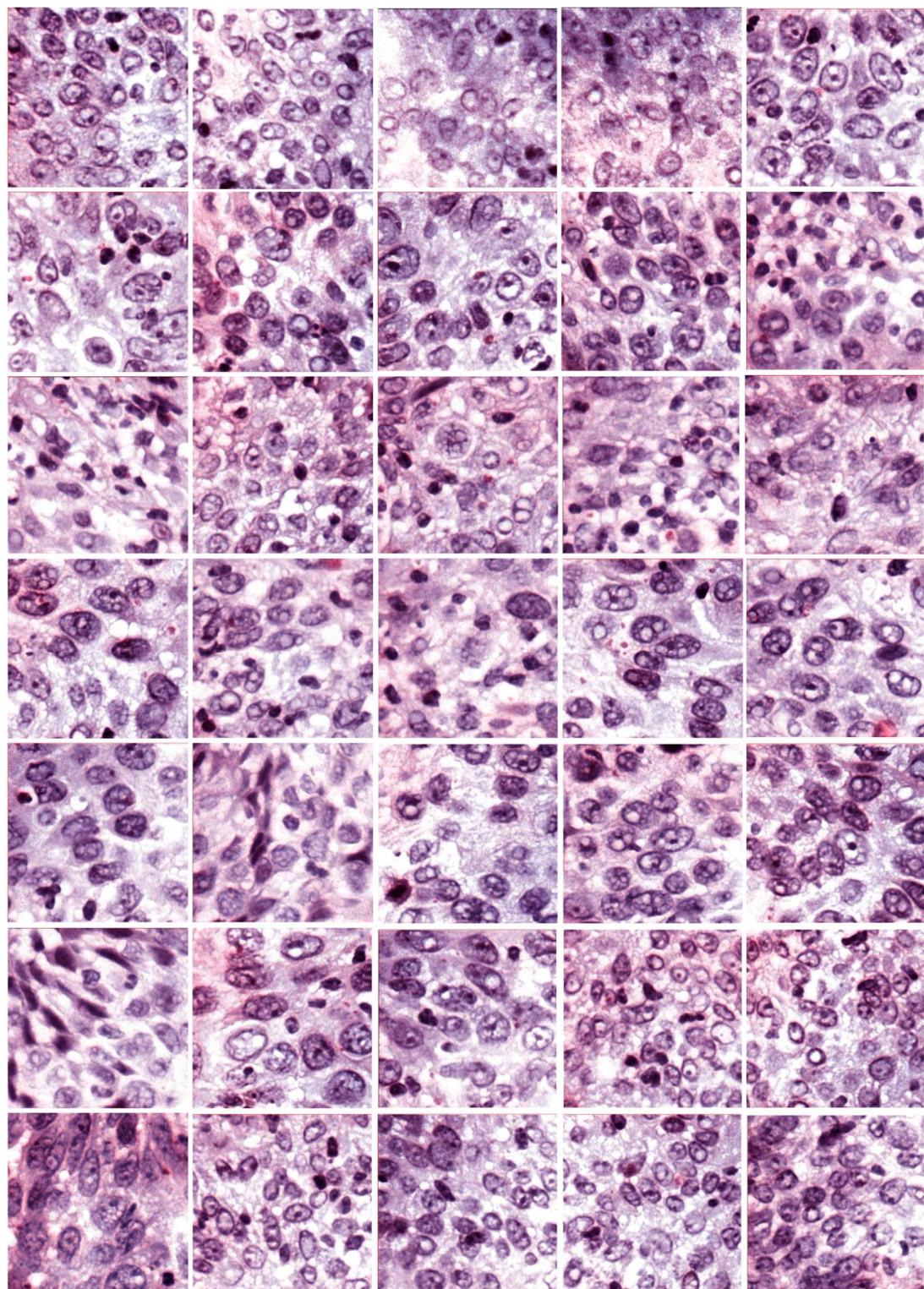
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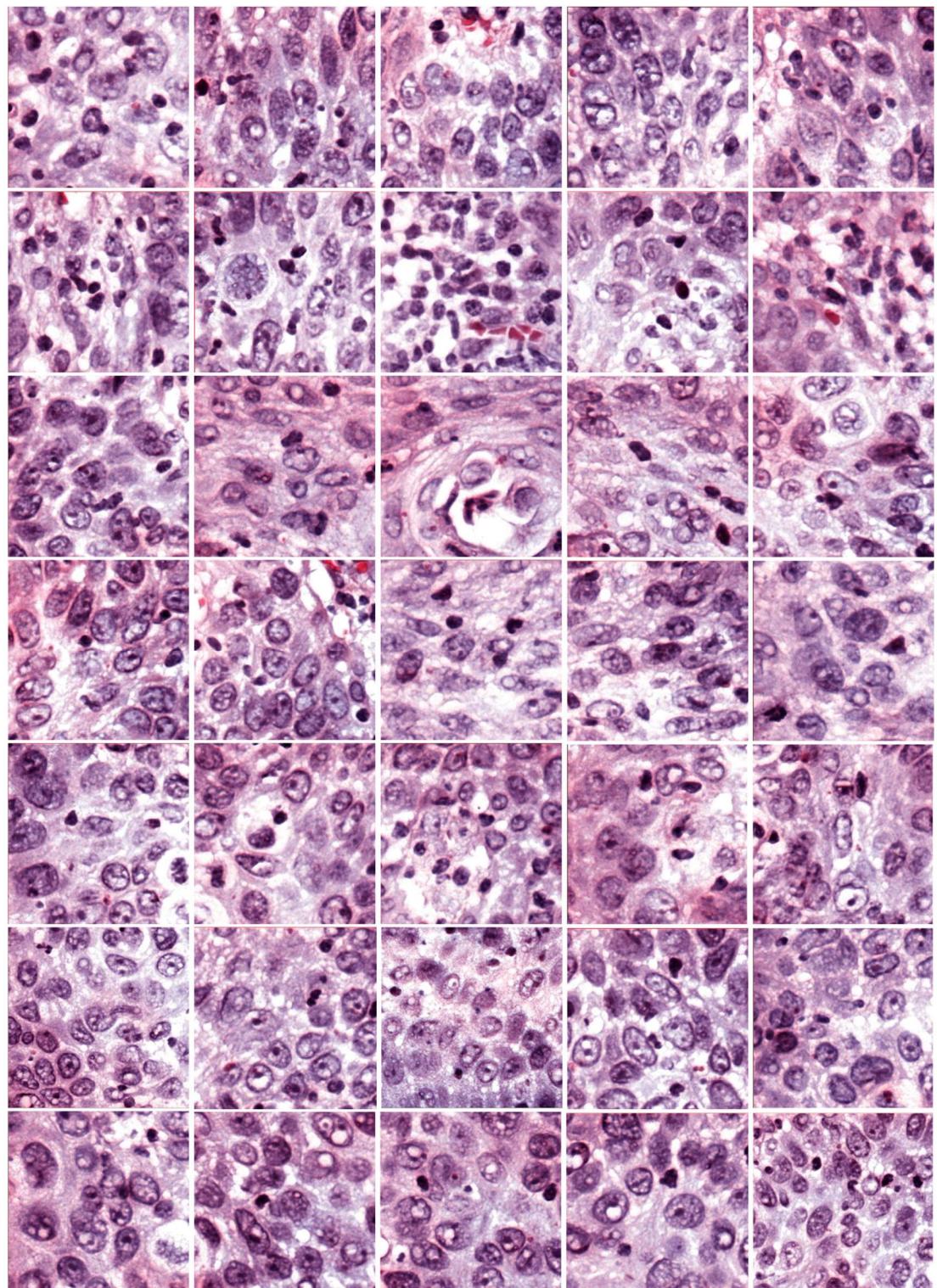
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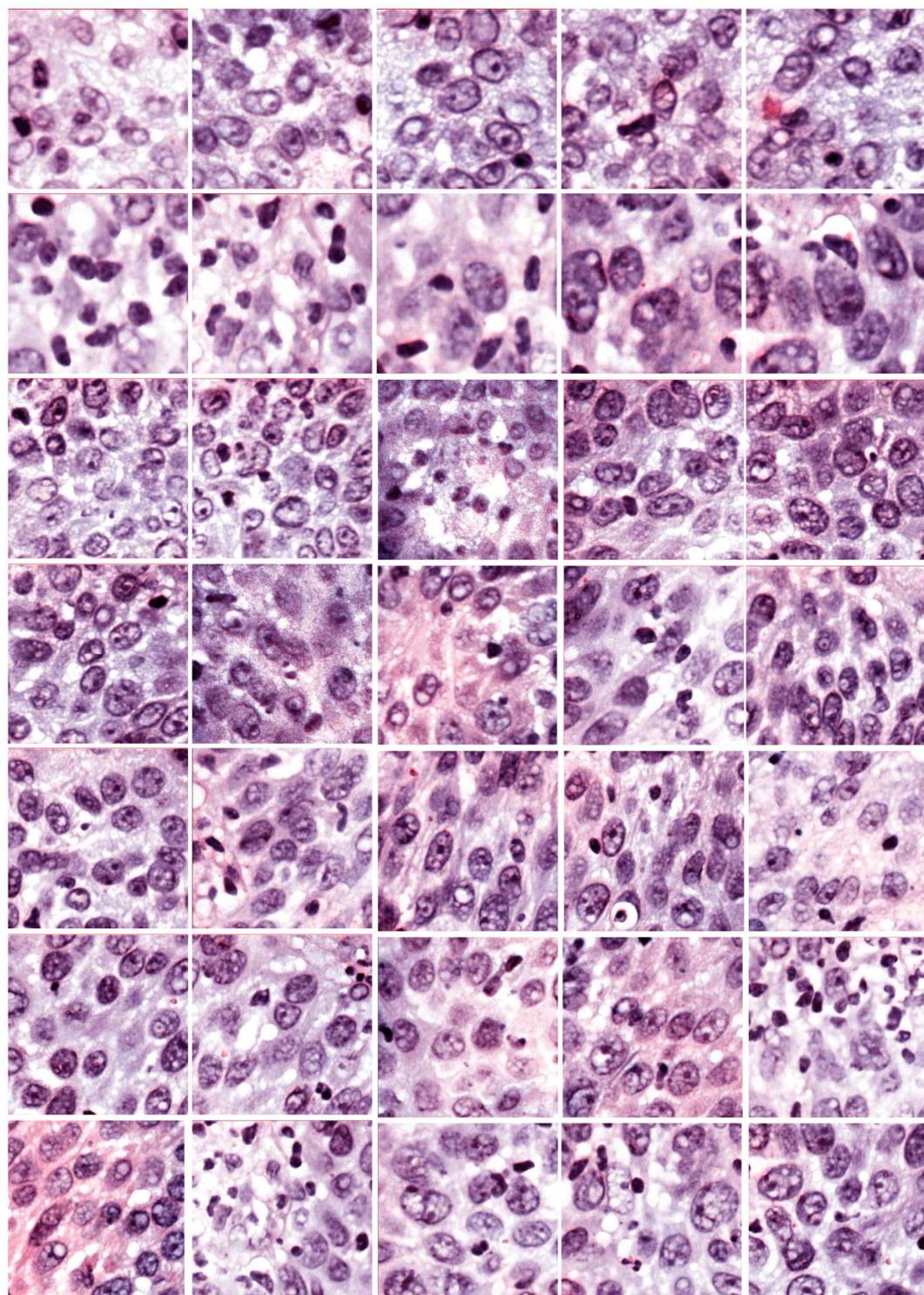




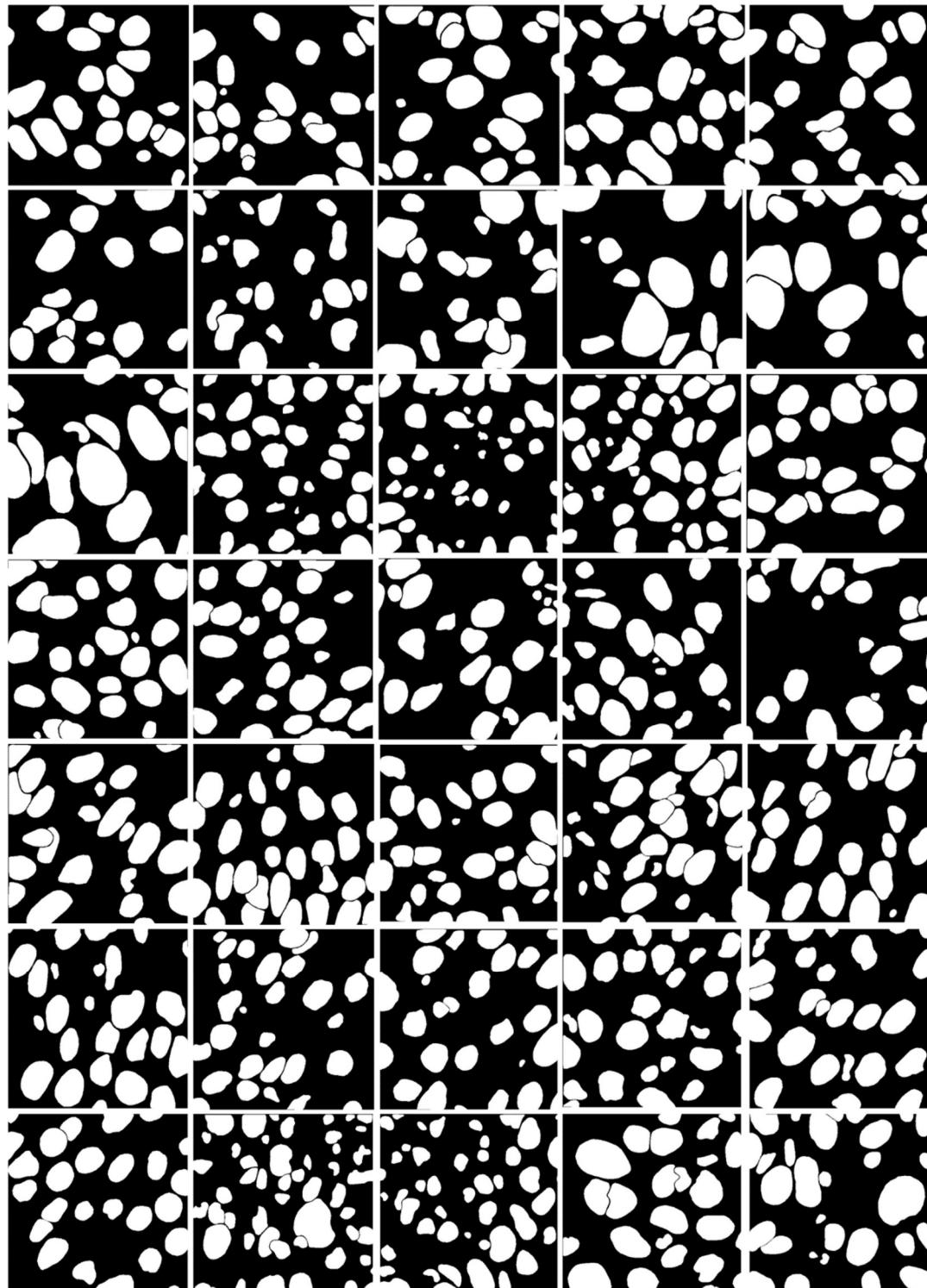
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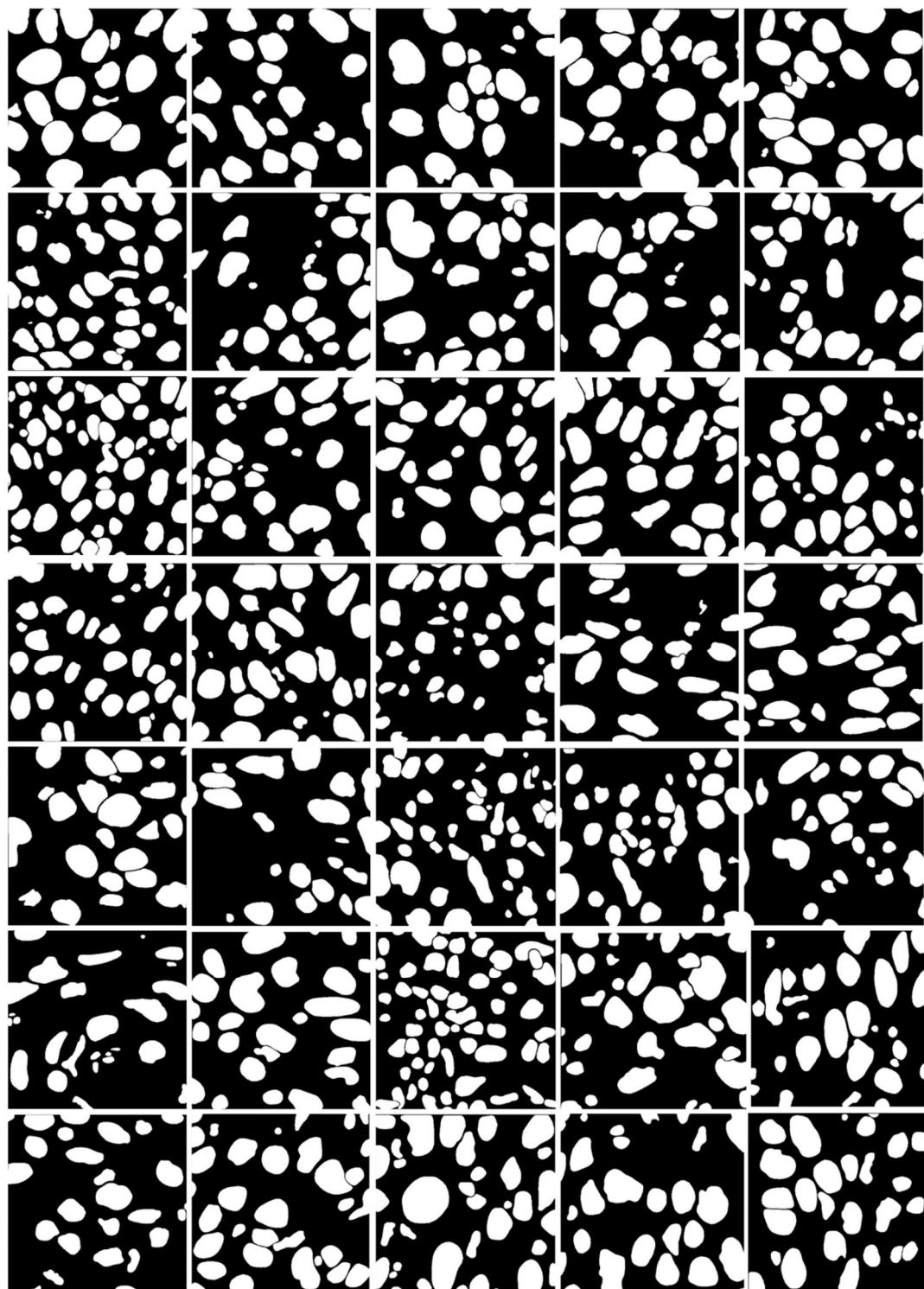


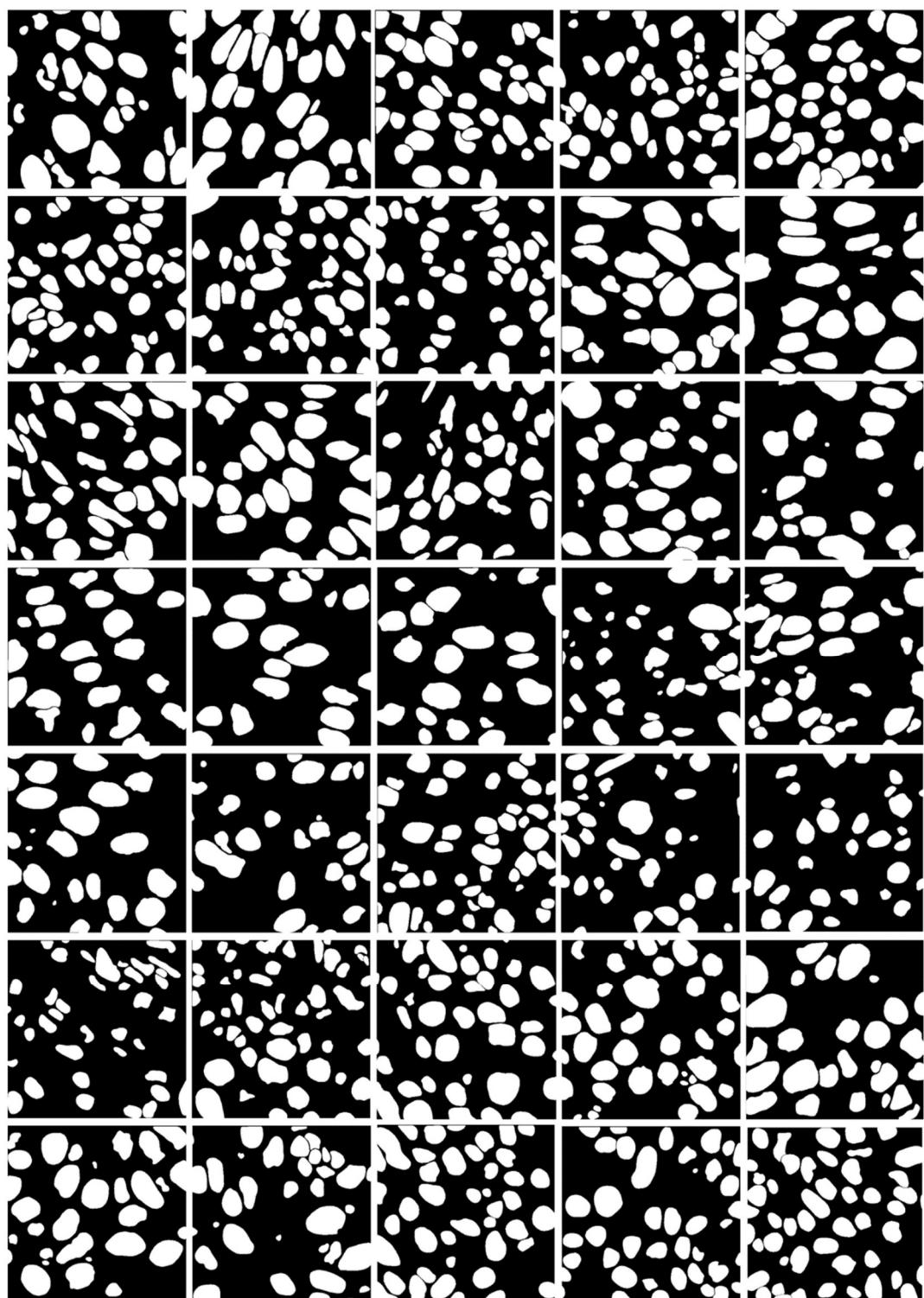




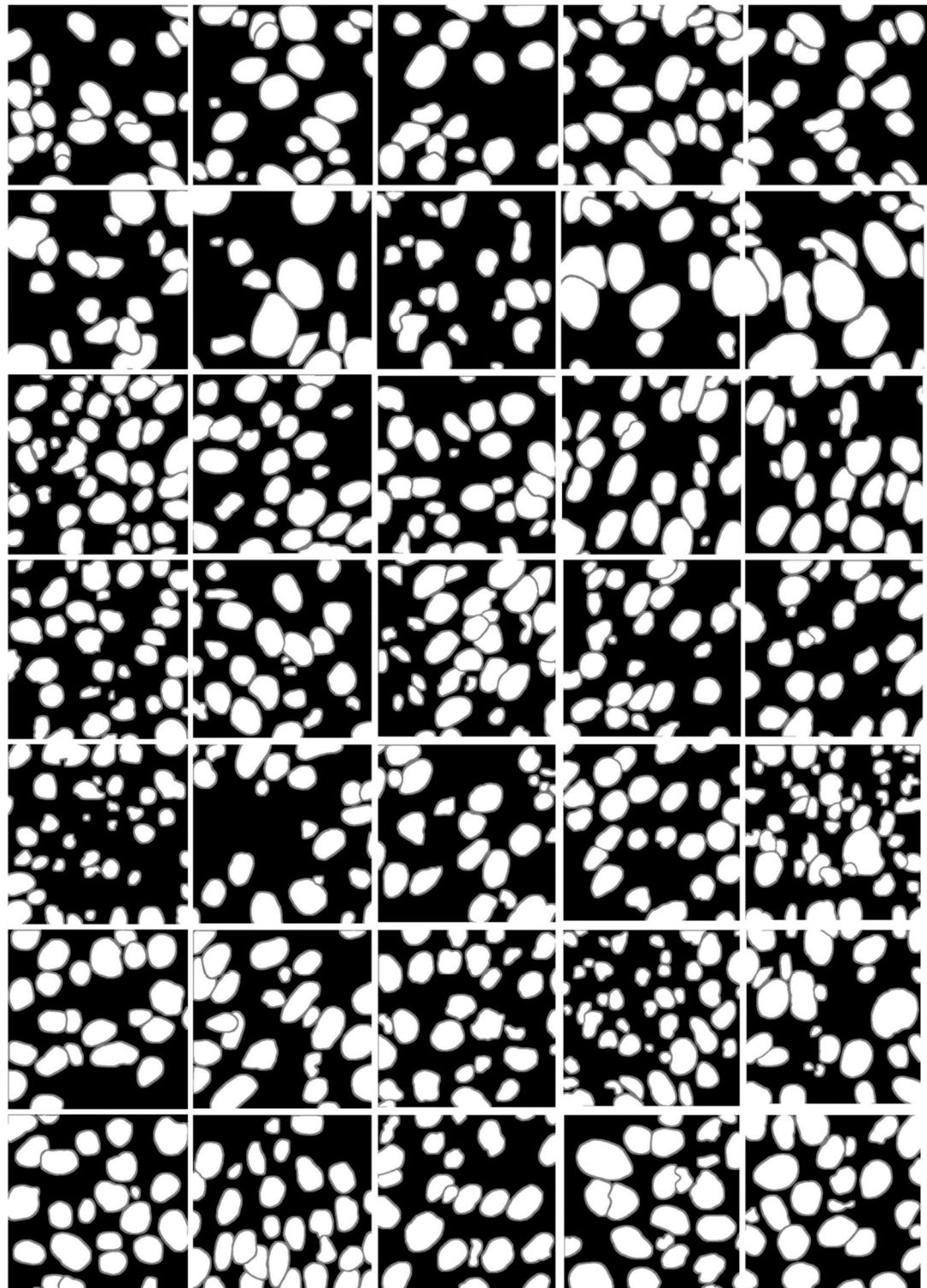
Dataset Citra Histopatologi Kanker Payudara (*ground truth biner*)

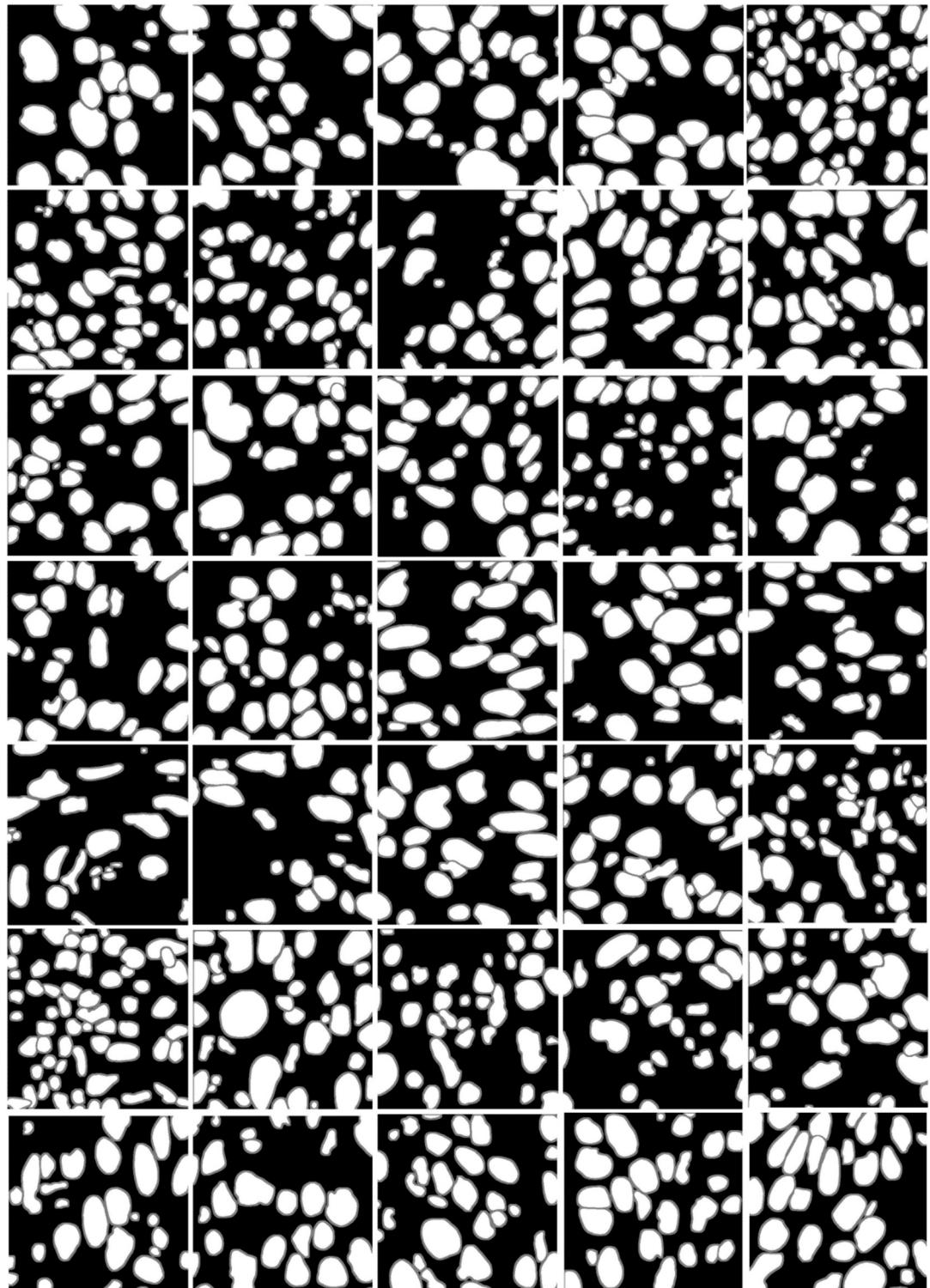


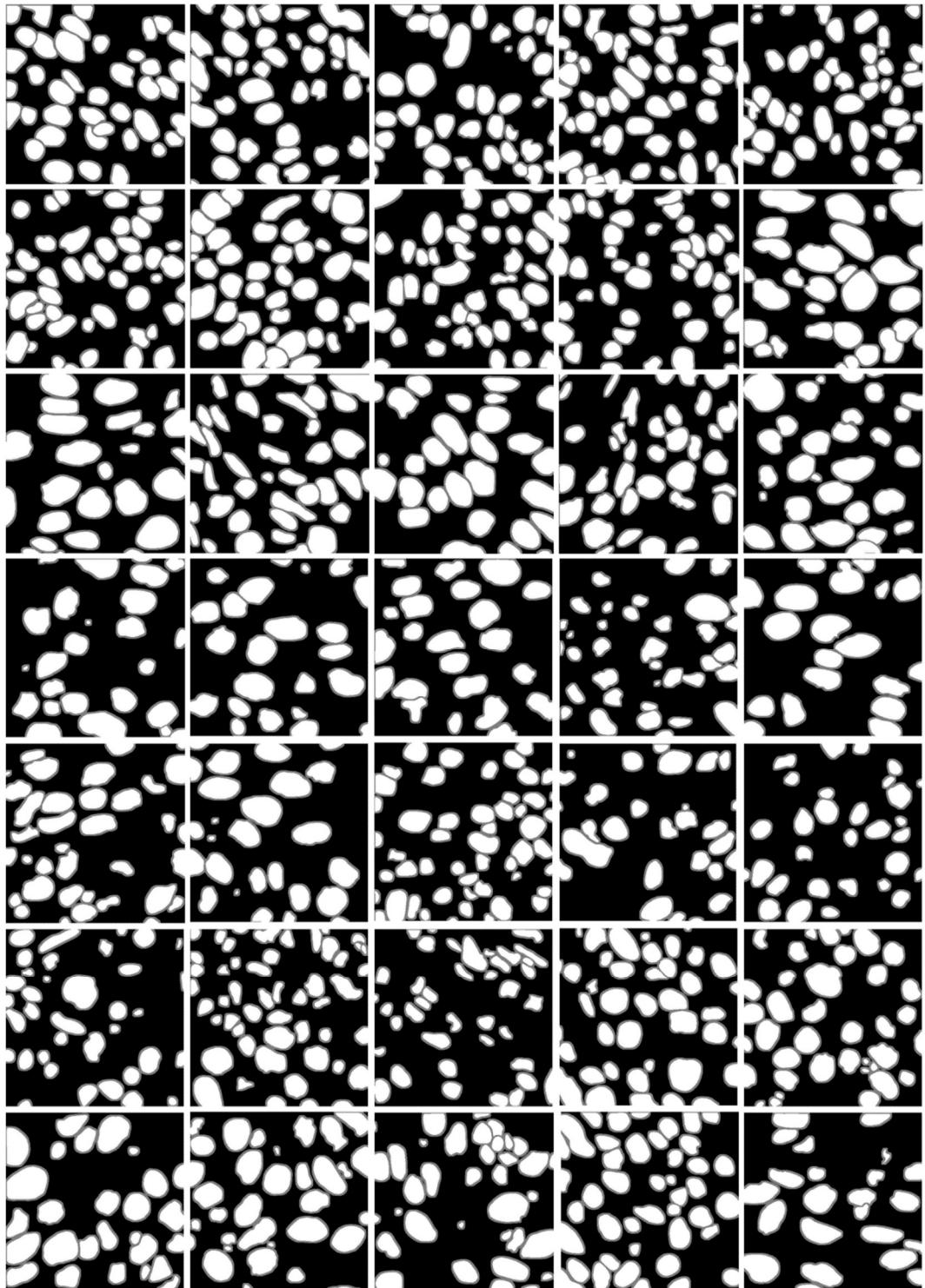




Dataset Citra Histopatologi Kanker Payudara (*ground truth multikelas*)







Dokumentasi validasi anotasi data oleh Dr. dr. Fathul Djannah, Sp,PA (via zoom)

