

REFERENCES

- [1] L. A. Torre, F. Islami, R. L. Siegel, E. M. Ward, and A. Jemal, "Global Cancer in Women: Burden and Trends," *Cancer Epidemiology, Biomarkers & Prevention*, vol. 26, no. 4, pp. 444–457, Apr. 2017, doi: 10.1158/1055-9965.epi-16-0858.
- [2] D. La Barbera, A. Polónia, K. Roitero, E. Conde-Sousa, and V. Della Mea, "Detection of HER2 from Haematoxylin-Eosin Slides Through a Cascade of Deep Learning Classifiers via Multi-Instance Learning," *Journal of Imaging*, vol. 6, no. 9, p. 82, Aug. 2020, doi: 10.3390/jimaging6090082.
- [3] A. C. Wolff *et al.*, "Human Epidermal Growth Factor Receptor 2 Testing in Breast Cancer: American Society of Clinical Oncology/College of American Pathologists Clinical Practice Guideline Focused Update," *Archives of Pathology & Laboratory Medicine*, vol. 142, no. 11, pp. 1364–1382, May 2018, doi: 10.5858/arpa.2018-0902-sa.
- [4] Z. Xu, X. Li, X. Zhu, L. Chen, Y. He, and Y. Chen, "Effective Immunohistochemistry Pathology Microscopy Image Generation Using CycleGAN," *Frontiers in Molecular Biosciences*, vol. 7, Oct. 2020, doi: 10.3389/fmolb.2020.571180.
- [5] J.-Y. Zhu, T. Park, P. Isola, and A. A. Efros, "Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks," arXiv.org, Mar. 30, 2017. <https://arxiv.org/abs/1703.10593>
- [6] L. Liu, Z. Liu, J. Chang, H. Qiao, T. Sun, and J. Shang, "MGGAN: A multi-generator generative adversarial network for breast cancer immunohistochemical image generation," *Heliyon*, vol. 9, no. 10, p. e20614, Oct. 2023, doi: 10.1016/j.heliyon.2023.e20614.
- [7] P. Isola, J.-Y. Zhu, T. Zhou, and A. A. Efros, "Image-to-Image Translation with Conditional Adversarial Networks," arXiv.org, Nov. 21, 2016. <https://arxiv.org/abs/1611.07004>
- [8] S. Liu, C. Zhu, F. Xu, X. Jia, Z. Shi, and M. Jin, "BCI: Breast Cancer Immunohistochemical Image Generation through Pyramid Pix2pix," *arXiv.org*, Apr. 25, 2022. <https://arxiv.org/abs/2204.11425>
- [9] T. Alam, W.-C. Shia, F.-R. Hsu, and T. Hassan, "Improving Breast Cancer Detection and Diagnosis through Semantic Segmentation Using the Unet3+ Deep Learning Framework," *Biomedicines*, vol. 11, no. 6, p. 1536, May 2023, doi: 10.3390/biomedicines11061536.
- [10] B. Bai *et al.*, "Label-Free Virtual HER2 Immunohistochemical Staining of Breast Tissue using Deep Learning," *BME Frontiers*, vol. 2022, Jan. 2022, doi: 10.34133/2022/9786242.
- [11] MIT, "Lecture Notes – MIT 6.390 Spring 2024," 2024. https://introml.mit.edu/_static/spring24/LectureNotes/6_390_lecture_notes_spring24.pdf
- [12] H. Huang *et al.*, "UNet 3+: A Full-Scale Connected UNet for Medical Image Segmentation," in *ICASSP 2020 - 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, May 2020. Accessed: May 14, 2024. [Online]. Available: <http://dx.doi.org/10.1109/icassp40776.2020.9053405>
- [13] zhixuhao, "unet/model.py at master · zhixuhao/unet," GitHub. <https://github.com/zhixuhao/unet/blob/master/model.py> (accessed May 14, 2024).

[14] R. Montoya-del-Angel, K. Sam-Millan, J. C. Vilanova, and R. Martí, “MAM-E: Mammographic Synthetic Image Generation with Diffusion Models,” *Sensors*, vol. 24, no. 7, p. 2076, Mar. 2024, doi: 10.3390/s24072076.